

Workings Of The Stars In Earthly Substances

Experimental Studies From The Biological Institute Of The Goetheanum with 15 Plates

By Lilly Kolisko (Original publisher: Orient-Occident Verlag, Stuttgart, 1928)

FOREWORD

This essay on the "workings of the Stars in earthly substances" is only a small part of several years' work in the Biological Institute at the Goetheanum. In it we have tried to penetrate into the Essence of Matter, to learn to know, the effects of the workings of substances, to set free the cosmic forces embedded in them and through a spiritual conception to restore what is earthbound to the universal spirit. We refer to a series of articles on "The Mystery of Matter" published in "Natura" a periodical for the extension of the Art of Healing based on the spiritual knowledge of man. This essay deals with the same subject.

WORKINGS OF THE STARS IN EARTHLY SUBSTANCES

It is here to deal with the Mystery of Matter and to open up a path into a vast domain, where wonderful things will be revealed to us, if we will but observe impartially the results of our experiments and acknowledge the pictures which Nature herself has painted. It is a treatise on science appealing to the Artistic Sense in man, which will enable him to approach with a feeling of reverence and awe a work of art depicting the influence of the stars in earthly substances.

It was Rudolf Steiner, the founder of Anthroposophy who gave us a new insight into the world of minerals, of plants and of animals. It was he who showed humanity the way back again from Matter to Spirit. The following essay is inspired by the teaching that Anthroposophy has to give.

All the substances around us are subject to the laws of gravity. Are all solid bodies however subject only to the earth-forces, or are they acted upon by other outside forces? Is it possible in fact for the stars themselves to influence and to work upon earthly matter? It is difficult for a modern man to believe that a star, millions of mile distant from the earth, should be able to exercise an influence on it and yet it is so, the stars do influence earthly events.

In a lecture given by Rudolf Steiner to a body of natural scientists, one finds the following important statement: "So long as Substances are in a solid state, they are subject to the forces of the Earth, but as soon as they enter the liquid state, the planetary forces come into play". This means, that the solid, unalloyed iron, or any iron salt is subject only to earth forces, but dissolve it in water and in solution it is subject not only to the forces of earth but also to the planetary forces of Mars to whom we owe the origin of iron on our earth.

Unalloyed silver or any silver salt in its solid state is subject to earth forces, but when dissolved in water it is the Moon, that is working in the solution, for it is to the influence of the Moon in a remote past, that we owe the origin of silver. See Rudolf Steiner: *Die Geheimwissenschaft im Umriß* (phil. anth. Verlag am Goetheanum Dornach (Schwas). Translation: *An Outline of Occult Science*. Anthroposophical Publishing Co., London.

Unalloyed lead or any lead salt in its solid state is subject to earth forces only, but when dissolved in water, it comes under the influence of Saturn according to the statements of Dr. Steiner.

We shall now proceed to describe a series of experiments which, up to a point, anyone can verify for himself. Why I am compelled to say "up to a point" will become apparent in the course of the essay. The preparations for the experiment are exceedingly simple. Except for the substances, only filter paper and a certain kind of glass cup are necessary. We have been occupied with these experiments for a number of years. They were undertaken for other purposes, and are referred to in other publications. See "Physiologischer und physikalischer Nachweis der Wirksamkeit kleinster Entitäten Philosophisch-Anthroposophischer Verlag am Goetheanum Dornach (Schweiz) 1923.

We employed for our experiments three solutions of mineral salts. Sulphate of Iron (Ferrum sulfuricum) Nitrate of Silver (Argentum nitricum) and Nitrate of lead (Plumbum nitricum). We obtained the solutions by dissolving 1 gram of pure salt in 100 cubic centimetres of distilled water, which then showed the following qualities.

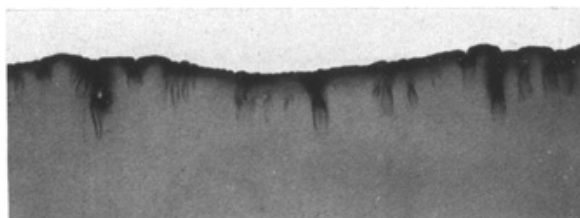
The clear green crystals of Sulphate of Iron dissolve quickly, the water gradually becomes cloudy, is tinged with a light yellow and after some time a yellow sediment is deposited. According to Dr. Steiner's statement we should have in this solution the influence of Mars, as well as that of the earth.

Secondly we dissolve Nitrate of Silver in the same way. The fine white crystals dissolve in the distilled water with the rapidity of lightning, we might say the water devours them greedily. Outwardly we cannot recognize the silver solution, as the water remains colorless but this liquid is stated by Dr. Steiner to be under the special influence of the Moon.

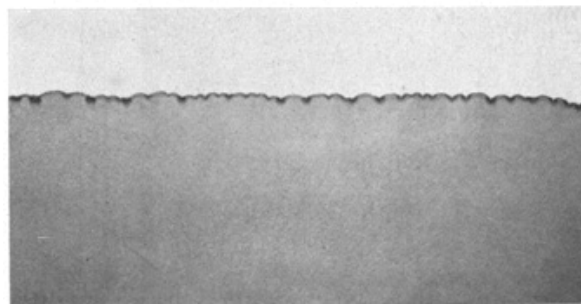
Thirdly we dissolve Nitrate of lead in the same way. The lead does not dissolve as quickly as Iron and Silver. The Lead crystals have a milky appearance, they are not transparent and are heavier than the crystals mentioned above. The solution remains quite clear, we cannot find any visible difference between the mere water and the solution of lead. In this liquid Saturn should be manifesting.

We now pour the respective solutions of iron, silver and lead into the different cups and into them we dip the filter paper. The liquid is gradually absorbed by the filter paper and after some time reaches the maximum height, where it begins to form what we will term a picture. Such pictures show a great variety of forms and a discussion of the formative forces hidden in the salts of silver must be reserved for another essay.

Plate 1 shows the photographic reproduction of a picture obtained from the silver in solution. Below is shown a corresponding picture of the iron in solution. For the line photographic reproductions of the Plates I have to thank the devoted work of Mr. Wilhelm Kaiser, a collaborator at the Biological Institute. The Sulphate of Iron shows only a narrow strip of brownish yellow edged with fine, wavy lines, it is unable to develop as many forms as shown in the silver solution.



Silbernitrat
Nitrate of Silver



Eisensulfat
Sulphate of Iron

Plate I

Of the Nitrate of lead we have no picture, for there is only a fine white salt-line visible at the edge. Lead by itself produces no picture. We will now go a step further and add to the silver solution the iron solution in equal parts. In a few moments a dark grey sediment appears and into this mixture of silver and iron solution we dip again a filter paper. A wonderful picture rapidly arises, see Plate II. Is it possible that out of the two pictures seen in Plate I we get this wealth of form? Forces of which one never dreamt are revealed in the union of Iron and Silver. A continuous growth is shown in the picture, which can naturally be realized much more vividly if one is able to follow the experiment from beginning to end.



Plate II Nitrate of Silver / Sulphate of Iron

The liquid is absorbed by the filter paper and after ten minutes or a quarter of an hour, the first black arrow appears, to be followed by a second, a third, a fourth, and so it proceeds. — The process unfolds itself before us in a marvellous manner and we

see the results of the combination of Iron and Silver, or expressed in another way, the effects of the united influences of the Moon and Mars. Hundreds of pictures were made in this way. Unfortunately they do not last. The silver blackens and after some weeks the picture fades. It is necessary therefore to take the photographs immediately the experiment has been completed.

One never gets tired of repeating these experiments for the result is never the same; and why? From a chemical point of view nothing is altered in either the silver or the iron solution. The substances remain the same, the filter paper is also the same (To obtain results that can be compared with one another, it is necessary always to use the same paper). Yet we must find a way, by which we can explain this great variety forms. For instance an all important fact lies in the difference produced by an experiment that is undertaken by day to one that is carried out at night. Let us take an Iron and silver solution as mentioned above and make our experiment at 11 A. M. A sunny day should be chosen and a glass placed near the window to have the benefit of the full daylight without actually being in the sun (Plate III). This picture gives us a harmonious impression.

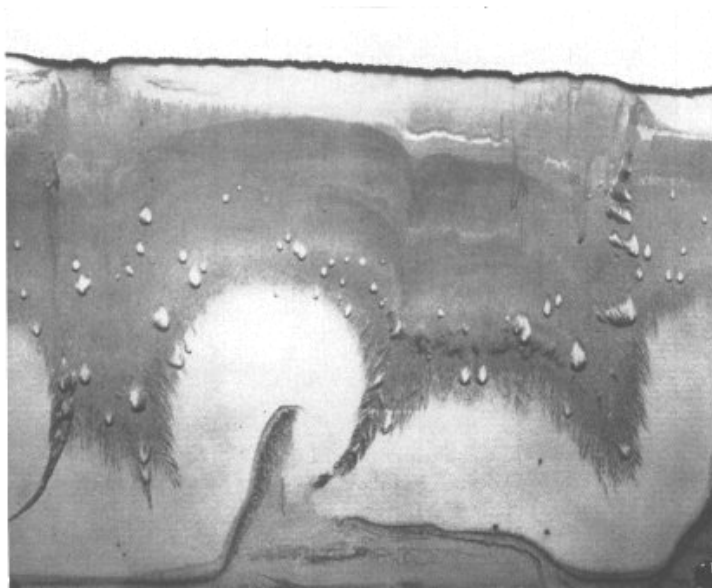


Plate III Nitrate of Silver / Sulphate of Iron, daylight 11.00 hours

There are few arrows to be seen. The colors are delicate changing from blue-grey to brownish-yellow, turning finally into a shimmering red. This describes the type of picture obtained if the experiment is made in day-light about midday; with an increasing light the forms decrease, and possibly no arrow forms will appear at all. Beginning the experiment at 11 A. M. it should be completed by 3 P. M. Now let us repeat the same experiment at night. At 11 P. M. we will place a similar glass, containing the same equal quantities of silver and iron in solution in the same place. It is a fine clear night in spring. The forming process goes on with a far greater rapidity than by day; by 3 A.M. the whole of the liquid is absorbed by the paper, the picture is finished (Plate IV). An enormous difference is to be seen in the two pictures.

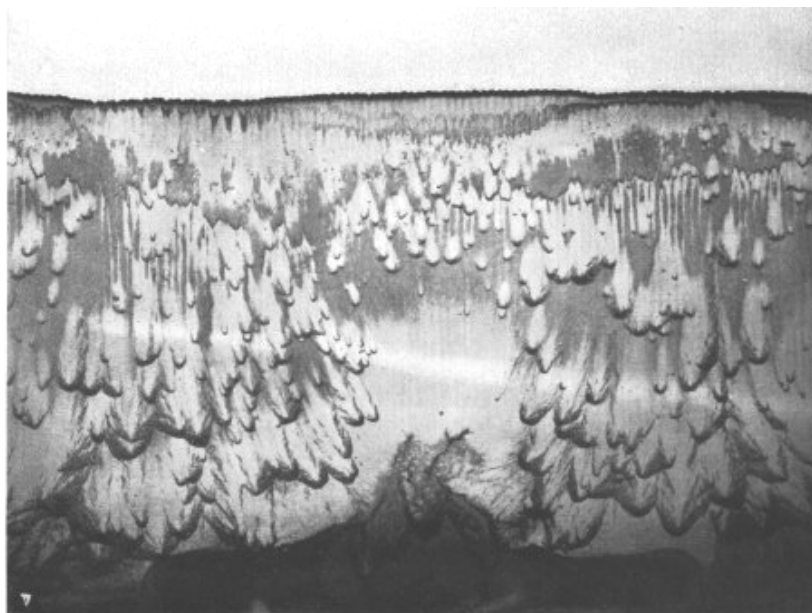


Plate IV Nitrate of Silver / Sulphate of Iron, night, 23.00 hours.

One would like to say — it is merely a coincidence, it is too extra-ordinary to be true. But what possibilities open up before us if night and day produce results so varied. — We repeated these experiments very often and always with the same result. At night the process is accelerated and the forms created are of greater variety. One objection may be here brought forward. What is there peculiar about the night? Is not the difference between day and night the same as between light and darkness and if so, why not make the experiment by day in a darkened room! We will answer the question by means of an experiment.

At 11 A. M. we have simultaneously one experiment going on in full day-light and another being carried on in a dark room, though the Sun is shining outside (Plate V). From 11 A. M. to 3 P. M. the experiment is carried out and what do we find? Compare Plate III and V and we must acknowledge that many forms have appeared in the darkness, which are not to be found in the light; but compare the picture obtained by day in the darkness, Plate V, with the picture obtained by night at the window, Plate IV, and we discover that the forming powers of night are still greater, than those that worked in the dark room by day.

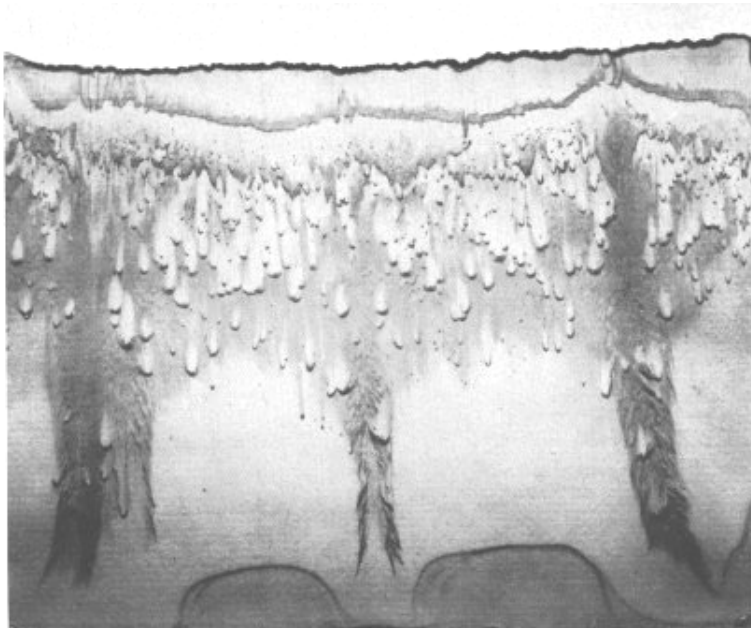


Plate V Nitrate of Silver / Sulphate of Iron, darkroom, 11.00 hours.

Now it is necessary to repeat the experiment also by night in the dark room. The darkness is still the same, therefore, if only the darkness is working, the night-picture in the dark room must be identical with the day-picture obtained in the dark room.

We look back again on plate IV. The experiment was carried out at 11 p.m. near the window. At the same time we make an experiment in the dark room (Plate VI). The picture obtained by night in the dark room, shows a greater wealth of forms, than the picture obtained by day in the dark room! We can therefore no longer say that it is only the activity of light and darkness and not the activity of day and night. Of course light and darkness have an influence too, they belong to the phenomena of day and night, but they are not the only causes of the differences in the forms produced by day and by night; all that happens in the cosmos during those two periods must be taken into consideration.



Plate VI Nitrate of Silver / Sulphate of Iron, darkroom, 23.00 hours

We come now to the third substance *Lead*, which by itself does not produce any picture. For a long time we tried to find a means whereby lead too could manifest formative forces in a characteristic manner and in the mixture of lead iron and silver we at last succeeded. We will therefore make the same experiment with lead added to the other two solutions.

Let us mix equal parts of nitrate of silver, nitrate of lead and sulphate of iron in the proportion of 1 gram to 100 cubic centimeters of distilled water, dip in the filter paper amid put the glass containing the solutions in the same place near the window at 11 A. M., leaving it there until 3 P.M. See plate VII. The picture is very dark, we notice only a few arrow-like forms and the forms are not the same as those produced by the combination of silver and iron, but we shall see them more distinctly later on.

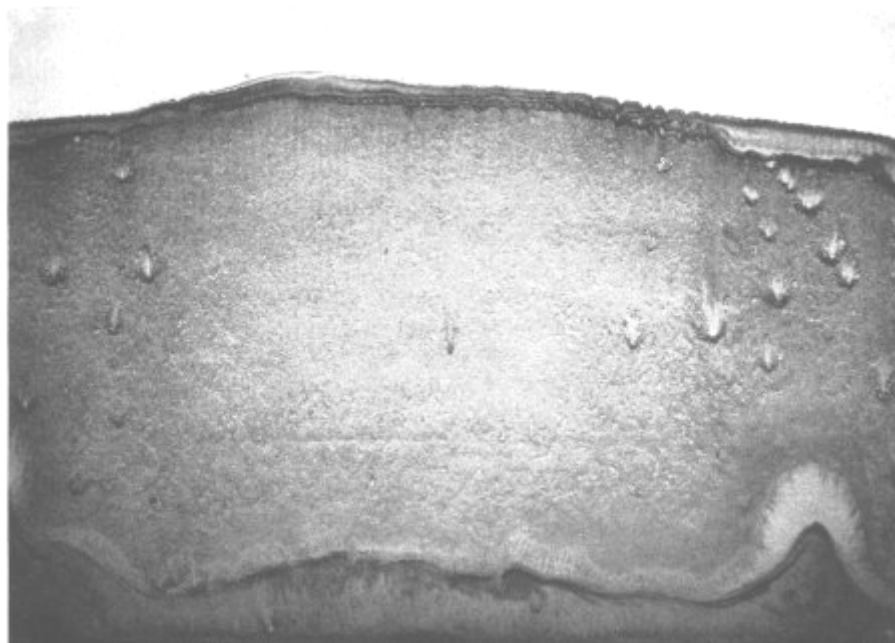


Plate VII Nitrate of Silver / Sulphate of Iron / Nitrate of Lead, daylight 11.00 hours

The next experiment consists in placing the mixture of silver iron and lead in the same place near the window between 11 P. M. and 3 A. M. See plate VIII. There again we see, the night has greater formative power. Compare plate VIII with plate IV showing the corresponding experiment with silver and iron only.

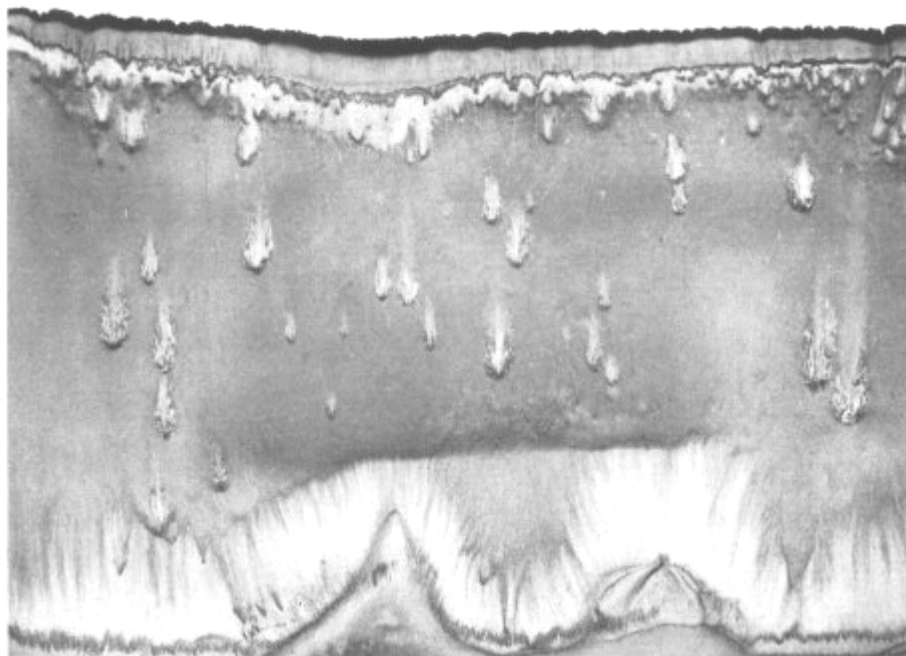


Plate VIII Nitrate of Silver / Sulphate of Iron / Nitrate of Lead, 23.00 hours.

In the dark room by day silver, iron and lead give us a distinct picture of the workings of lead. The arrow like forms which are produced by the combination of silver and iron are always sharply defined, one would like to describe them as "flying through the air", then the lead begins visibly to work and gives weight to the arrows. They no longer "fly" but give us rather the

impression of "falling", they are urged towards the earth. I cannot here do otherwise than explain one picture through the medium of another. Under the influence of the lead the sharp edges disappear. The forms now appear ragged and broken. In the one instance (the mixture of silver and iron) one has the impression of a fresh youthful face, directly the lead is added, the face becomes old, wrinkled and careworn.

I do not wish to be misunderstood and to hear someone say, that he expects to see on the one side the picture of a young face and on the other that of an old man, naturally that would be nonsense, but looking at the pictures intently, one can get some such impression as I have tried to put before you.

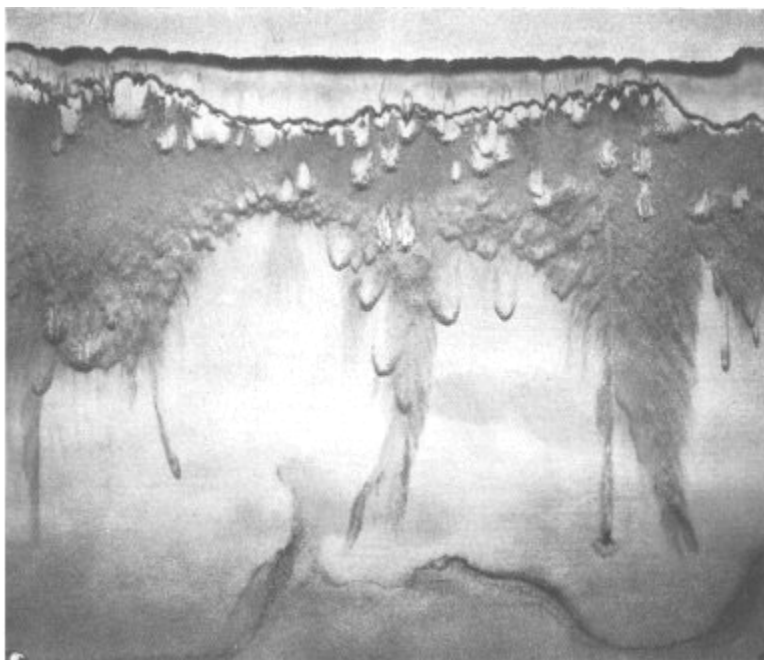


Plate IX Nitrate of Silver / Sulphate of Iron / Nitrate of Lead, darkroom, 11.00 hours

And last of all we put silver, iron and lead in the dark room from 11 P. M. till 3 A. M. (see plate X). In this picture we cannot help getting the impression of heaviness. — How massive, how gigantically plastic the forms look! Thus we get the most powerful forms in the dark room du-ring the night-time.

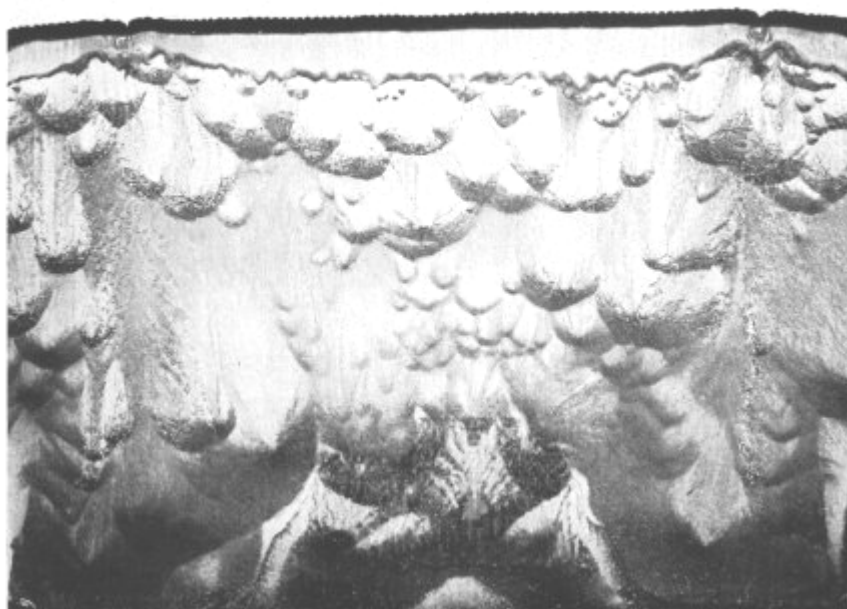


Plate X Nitrate of Silver / Sulphate of Iron / Nitrate of Lead, darkroom, 23.00 hours.

The pictures one obtains by these solutions are again most varied in their forms. We possess a wealth of material but are compelled to make only a small choice of reproductions here, on account of the high cost of printing. If we are enabled to continue this series of essays, we are convinced that the abundance of proofs we are able to give, will remove every possible doubt in the minds of the reader as to the facts here described.

Up till now however there is still one thing we have been unable to demonstrate, that is that the stars are working in the formative forces. How is it possible to prove that there is the influence of the Moon in the silver salt, of Mars in the Iron salt and of Saturn in the Lead salt? By means of an experiment I am about to describe, we shall see unfolded before ourselves the Influence of the planets.

On the 21st November 1926 there were some very interesting planetary constellations. Something important was happening amongst the stars. At noon there was an upper conjunction of Sun and Venus, at 6 o'clock in the evening a conjunction of Sun and Saturn. Sun and Saturn were going to be in conjunction; what was more natural than that we should prepare to make several experiments with silver, iron and lead during the time in question. For month we had studied the action of these substances in cooperation during the day and during the night. According to the statements of Dr. Rudolf Steiner, in a solution of lead the powers of Saturn should manifest themselves. Now in the Heavens at the time given above, something particular is happening with Saturn. If in reality this planet so far from away earth, is in some connection with the lead on earth, then surely the lead solution must be influenced by other forces at the time the sun is standing before Saturn, than when this is not the case. There was an experiment that could make our hearts beat quicker-would it be possible to penetrate into the secrets of the Cosmos, or not?

On the 21st November 1926 at 6 o'clock in the evening we dipped the filter paper into a solution of silver iron and lead. At this season of the year it is quite dark at 6 o'clock. It seemed likely therefore that we should have a picture similar to that shown on Plate VIII. To our great astonishment a long time elapsed and nothing appeared on the paper. In normal circumstances the first forms appear in ten or fifteen minutes. In this case more than a whole hour elapsed before the first forms made their appearance. At 11 o'clock the picture was finished (See plate XI). Where are all the forms? Where is the lead?

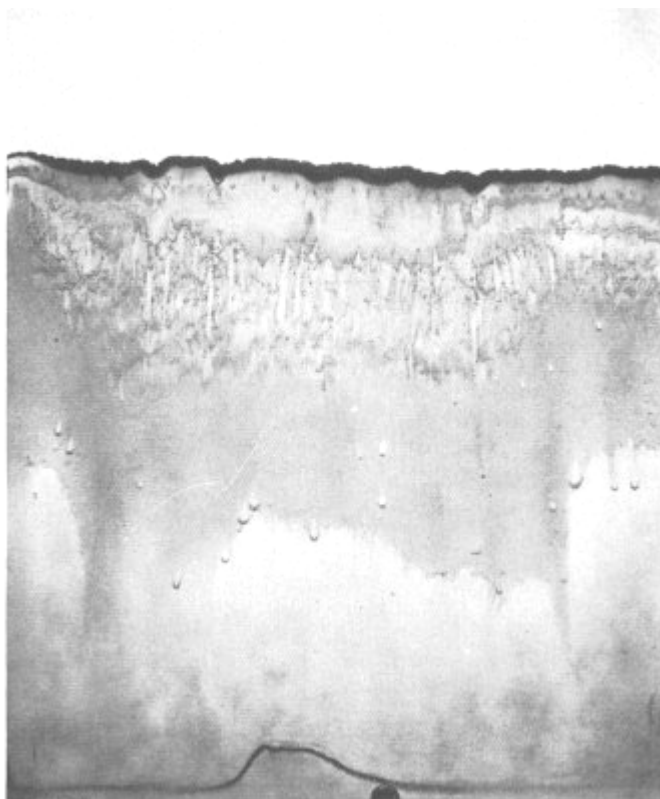


Plate XI Silver Nitrate / Iron Sulphate / Lead Nitrate, 21 November 1926, Sun-Saturn Conjunction, 18.00 h

A remarkable result indeed and I must confess that I felt somewhat disconcerted at it, the more so, as I had expected, when undertaking the experiment, that if Sun and Saturn were in conjunction, then some particular force would be communicated to the lead and the picture would be more powerful than ever. But I found the contrary to be the case. It seemed as if the lead could not act at all. My abstract idea was corrected by reality.

The experiment was repeated at 12 o'clock at night in the dark room. We knew that here the formative forces acted more intensely. Two hours later we looked to see what had happened. Again we were astonished at what we found. The picture was so remarkable, such a riddle, that we determined to make yet another experiment at 2 o'clock in the morning.

Plate XII (on the following page) represents the picture obtained from the experiment carried out from midnight until 4 o'clock in the morning.

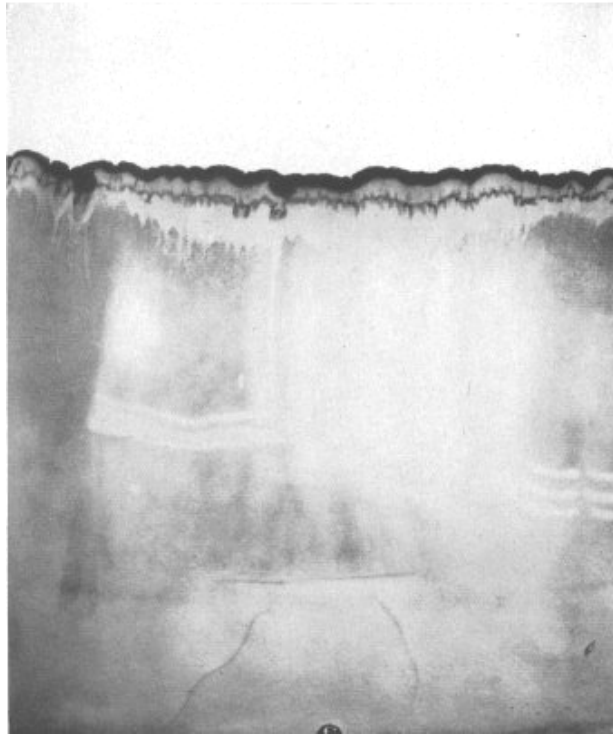


Plate XII Silver Nitrate / Iron Sulphate / Lead Nitrate, 21 November 1926, Sun-Saturn Conjunction, 24.00 hours

Every possible defect in the carrying out of the experiment was guarded against. The arrangements were such, that under normal circumstances a picture similar to Plate X was to be expected. Yet what did we see? Instead of heavy, massive forms an utter blank. An invisible hand had blotted out the working of the lead in my solution. And whose was the invisible hand? It was the Sun — the Sun had stood before the planet Saturn and here below on the earth the lead could not manifest its activity. When the Stars speak man must stand still in silent awe! Plate XIII represents the picture obtained from the combination of silver, iron, lead in solution from 2 o'clock till 7 o'clock on that same morning. Slowly, very slowly and delicately are the forms returning. One can feel the Sun has ceased to cover entirely the planet Saturn. Even this picture has no resemblance with our usual forms.

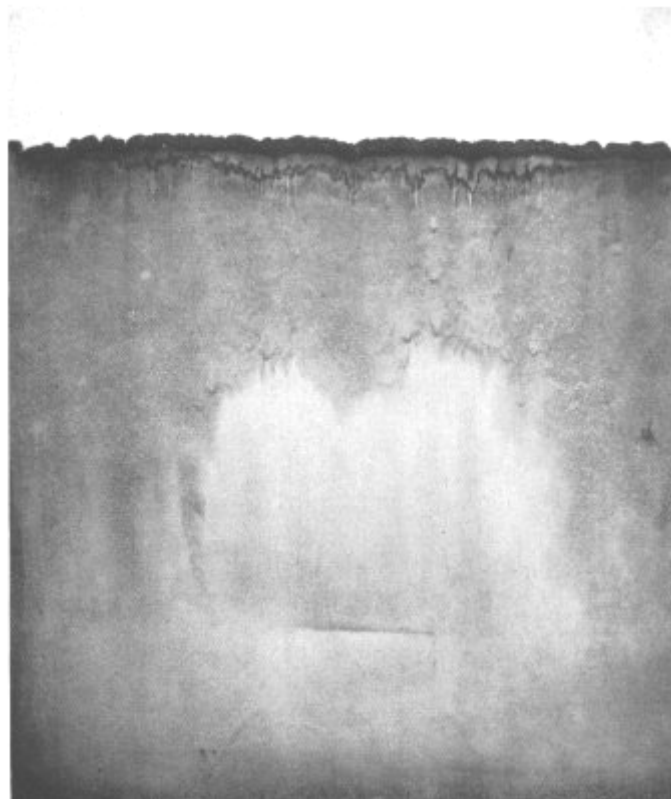


Plate XIII Silver Nitrate / Iron Sulphate / Lead Nitrate, 22 November 1926, Sun-Saturn Conjunction, 02.00 hours

On November 22nd at 11 A. M. we again made an experiment with the silver, iron and lead in the dark room and obtained the picture you see on plate XIV.

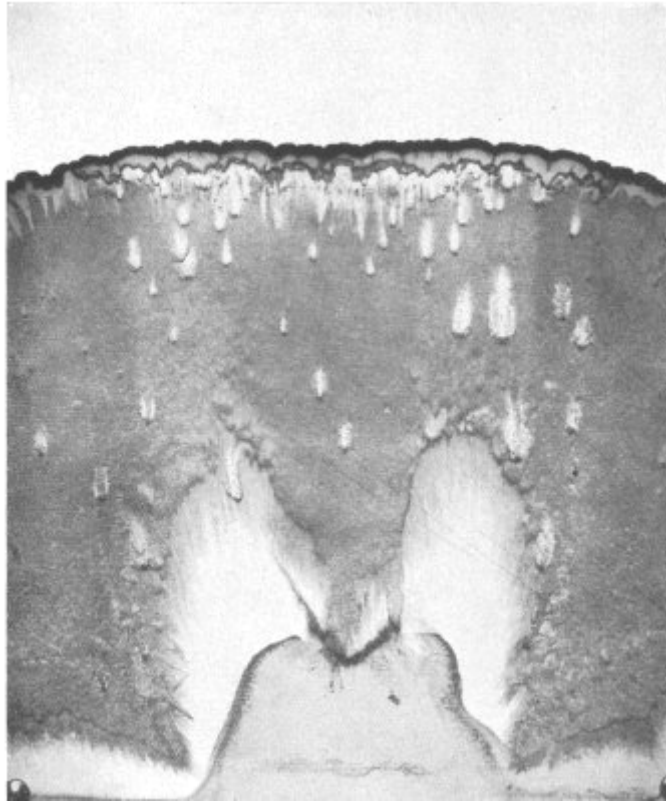


Plate XIV Silver Nitrate / Iron Sulphate / Lead Nitrate, 22 November 1926, Sun-Saturn Conjunction, 11.00 hours

The conjunction of Sun and Saturn was over, normal conditions had returned and day and night gave to us again the customary well known beautiful forms.

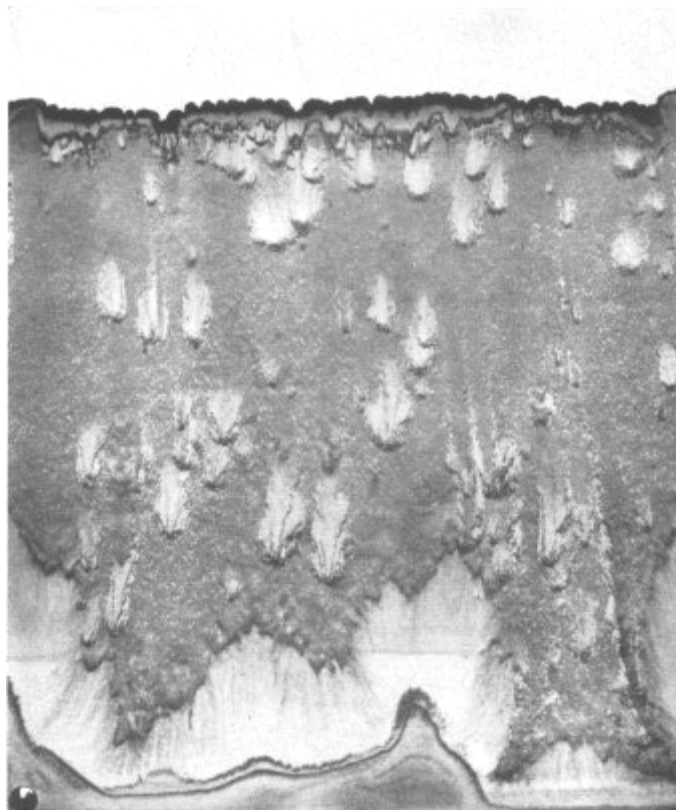


Plate XV Silver Nitrate / Iron Sulphate / Lead Nitrate, 22 November 1926, Sun-Saturn Conjunction, 23.00 hours

The stars have spoken and shown us the bridge that spans the gulf from Earth to Heaven, from the material to the spiritual, to the matter that is penetrated with spirit. — If only people would take upon the words of Dr. Steiner in their real meaning, would look upon them as stepping stones in the road from Earth to the Cosmos, mankind would then be able to fulfil the mission ascribed to it by the Guiding Spirit of the Time.

Working With The Stars In Earthly Substances

The Solar Eclipse, June 29th, 1927

Experimental Studies From The Biological Institute Of The Goetheanum
with 3 Multi-Colored and 20 Single Colored Plates.

By L. Kolisko (Original Publisher: Orient-Occident Verlag, Stuttgart-Den Haag-London, 1928)

FOREWORD

In the preceding essay, published a few months ago, the attempt was made to show by means of scientific experiments that the stars in the heavens play a very real part in happenings on Earth. The experiments were carried out with the metallic salts of silver, iron and lead. The workings of these metals, in normal conditions, both by day and by night, in full daylight and also in a dark chamber, were illustrated by a series of pictures. We were then able to show that fundamental changes occur at the time of a conjunction of Saturn and Sun. Indeed the activity of salts of lead appears to be wholly suspended at the time of the conjunction. In this present essay, we shall show, again by means of pictures painted by the Cosmos itself, how the total eclipse of the Sun on June 29th, 1927, was mirrored in the metallic salts of gold, silver and tin.

Gold, the physical representative on Earth of the Sun, and silver, the physical representative on Earth of the Moon, are obviously the sub-stances most suited to present in picture form, the darkening of the Sun by the Moon. Once again we must emphasize that his essay represents merely a tiny fragment of extensive work. Unbroken study of many years has enabled us to create a basis which justifies us now in placing the results of our research before the world. May the minds and hearts of men be open in order that the Sun may shine into them when the physical Sun is darkened. Before we can speak of the reflection of the solar eclipse in earthly substances, it is necessary to say something about the particular substances that were used as a basis for the experiments.

EXPERIMENTS WITH GOLD

It is curiously interesting to experiment with gold. The first experiments we carried out with gold some years ago, consisted in dissolving it in aqua regia (nitric acid / hydrochloric acid mixture) and evaporating the superfluous acid so that we finally had gold in solution as chloride of gold. (See *Physiologischer Nachweis der Wirksamkeit kleinster Entitäten bei sieben Metallen. Wirkung von Licht und Finsternis auf das Pflanzenwachstum.* By L. Kolisko. Philosophisch-Anthroposophischer Verlag. Dornach, 1926.) This solution of chloride of gold was rhythmically diluted — that is to say, raised to a higher potency — and then the different potencies were sprinkled on grains of wheat. For a fortnight, the wheat germinated and grew under the in-working forces of the gold potencies and the result of the measurements was a wonderfully harmonious curve. To begin with, then, we investigated the effect of gold on the growth of plants. Simultaneously, we tried to produce evidence of the effect of very highly diluted substances by means of the capillary-analytical method, inserting strips of filter paper in small glass vessels each containing one of the different potencies. Through the course of the year we investigated in this way different plant extracts and metallic salt solutions of silver, quicksilver, copper, gold, iron, tin, lead, antimony and so forth.

Apart from the study of the effect of the potency, we observed the pictures produced by gold, silver, copper, iron and how the pictures changed in the course of a month, a year and, finally, in the course of several years. The results of these investigations will have to be dealt with in greater detail in an essay devoted entirely to the subject of gold. For the sake of explaining the experiments described in this present book, however, we add these few very brief remarks about gold.

We use chloride of gold (aurum chlor. cryst. fuscum) as applied by E. Merck of Darmstadt for industrial purposes, dissolving 1 gramme in 100 ccm. of distilled water. Gold dissolves very rapidly and the water becomes at once a golden-yellow color. We pour 10 ccm. of this solution into a glass vessel and insert a strip of filter paper. In the case of the pictures of silver we find that the wealth of forms is so great that it is impossible to present one picture only of silver. Hundreds of pictures would have to be shown before any conception can be gained of the wealth of the forms. In the case of gold, the colors are so rich that many pictures must be observed before we can realize the nature and character of the metal. The colors that make their appearance vary between pure yellow and dark violet. We find every shade of yellow up to brown, also shades of rosy pink, purple, blue, light to dark violet. Plate I is a colored picture of gold in so far as the color can be reproduced. (For the fine photographic reproductions of the plates I have to thank the untiring and devoted work of Mr. Wilhelm Kaiser, a colleague at the Biological Institute.) It was taken on December 25th 1926, in a dark chamber, and proves that light has no direct influence upon the manifestation of the colors.

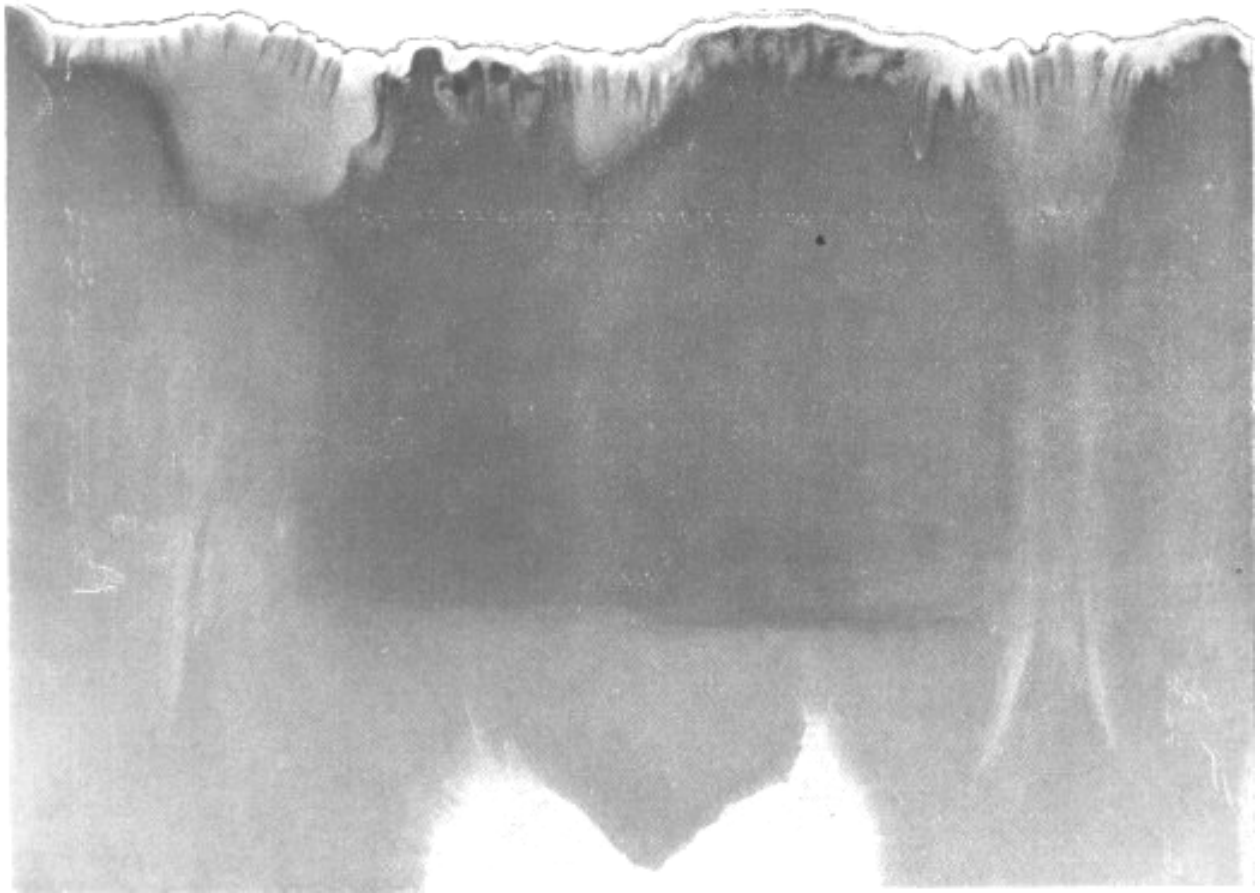


Plate I Gold Chloride, 25.12.26

When we have gold in a state of solution, the Sun — according to the indications given by Rudolf Steiner — is working in it. The time of a solar eclipse is therefore highly favorable for observing the changes appearing in gold. For Stuttgart, the time of the eclipse was given as 5.19 a. m., June 29th. I decided, therefore, to insert filter paper in a solution of gold on June 29th at 5.19 a. m. and to allow the picture to form under the influence of the solar eclipse. The usual picture of a solution of gold was familiar to us as the result of many experiments. In order, however, to discover the appearance presented by gold immediately before the solar eclipse, it was necessary to carry out experiments with chloride of gold several days before, at 5. 19 a. m. — that is to say, at the same moment when the eclipse would occur on June 29th. On account of the high cost of reproduction it has unfortunately been impossible to print in color all the pictures of gold. Plate II shows the gold on June 27th and 28th.

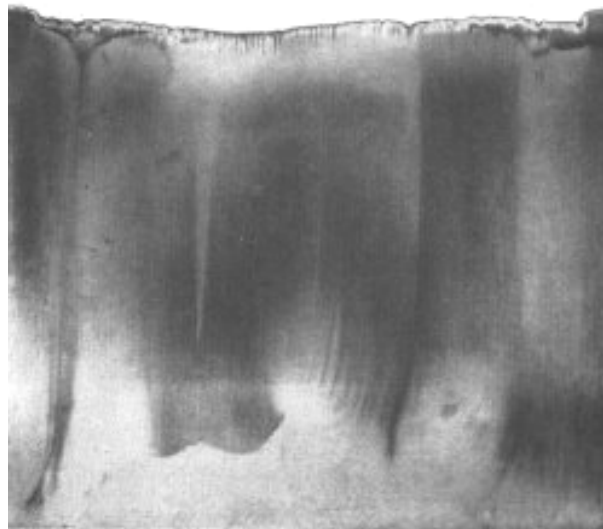


Plate II, top, Gold Chloride, 27.06.27, 05.19h



Plate III, top, Gold Chloride, 29.06.27, sunrise

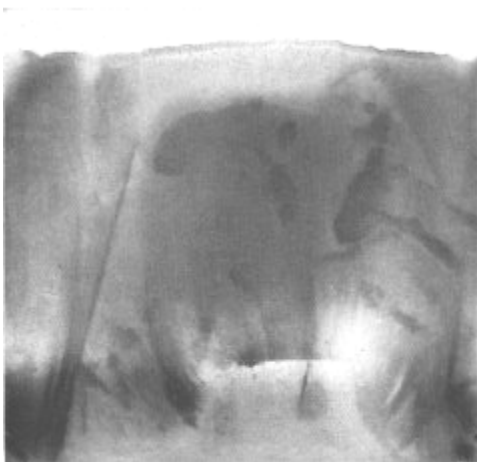


Plate III, bottom, Gold Chloride, 29.06.27, 05.19h, beginning of solar eclipse

Plate IV shows the gold on June 29th at 7 a. m., and again at 5. 19 p. m., after the eclipse. The picture obtained at the time of the eclipse manifests the above-mentioned phenomenon still more strongly. A large number of specks have appeared. The colors are not so luminous as on other occasions; their tones are mostly brownish-red dirty violet. It is altogether an unpleasing picture.

On June 29th at 5. 19 p. m. the picture of the gold has become quite clean again; the colors are more luminous but they have not yet assumed their natural, inherent beauty and purity.

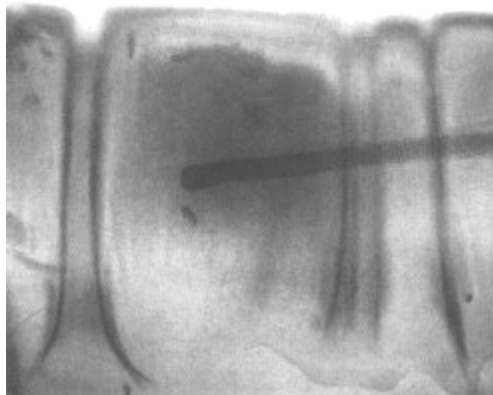


Plate IV, top, Gold Chloride, 29.06.27, 07.00h

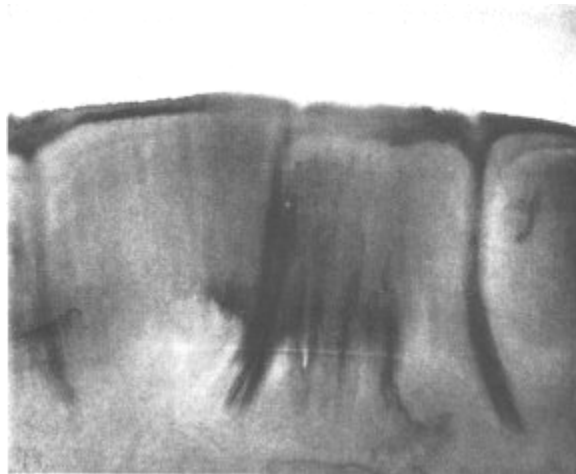


Plate IV, bottom, Gold Chloride, 29.06.27, 17.19h

EXPERIMENTS WITH SILVER

We have chosen, from a continuous series, pictures of silver taken two days before the eclipse, on the actual day of the eclipse and the two following days. in the first publication — *Workings of the Slats in Earthly Substances* — we included a picture of silver, referring to an essay dealing entirely with silver which will shortly be published. The pictures in this present work are obtained in the following way: Between 8 a. m. and 9. a. m. a solution of nitrate of silver (1 gramme in 100 can. of distilled water) is poured into a glass vessel into which the filter paper is dipped. The silver rises, attaining its maximum height after two or three hours and is colored by the light and air. According to whether the Sun shines more or less strongly, the tones of the color vary from light to dark brown. No matter how much silver is contained in the vessel, when the maximum height is attained, the surplus silver remains stationary in the vessel and the filter paper is worked upon simply by the light and the air. Towards evening, when the Sun is setting, the fluid begins to rise still higher and oversteps the boundary set up during the day. The extent to which the fluid' rises by night is dependent upon the general weather conditions and the resulting temperature and moisture of the air. When the air is moist and the night cold, the fluid rises higher than when the air is dry and the temperature warm. At night, therefore, there is a second ascent of the fluid in the filter paper and when the second boundary has been reached, a second picture is formed — the night picture. Plate V is a picture taken by day and Plate VI shows the night picture placed with it. These pictures cannot be obtained in the laboratory but only in the open air, under a glass bell or glass frame.

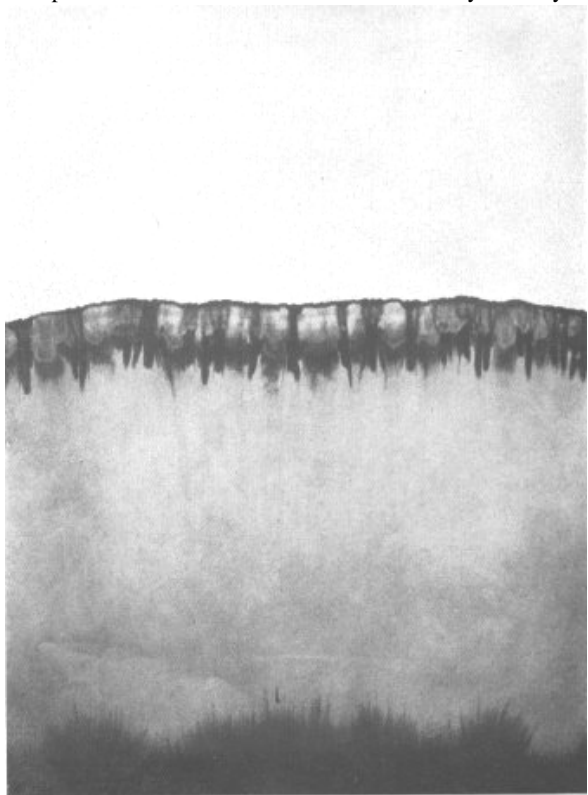


Plate V, Silver Nitrate, picture taken by day

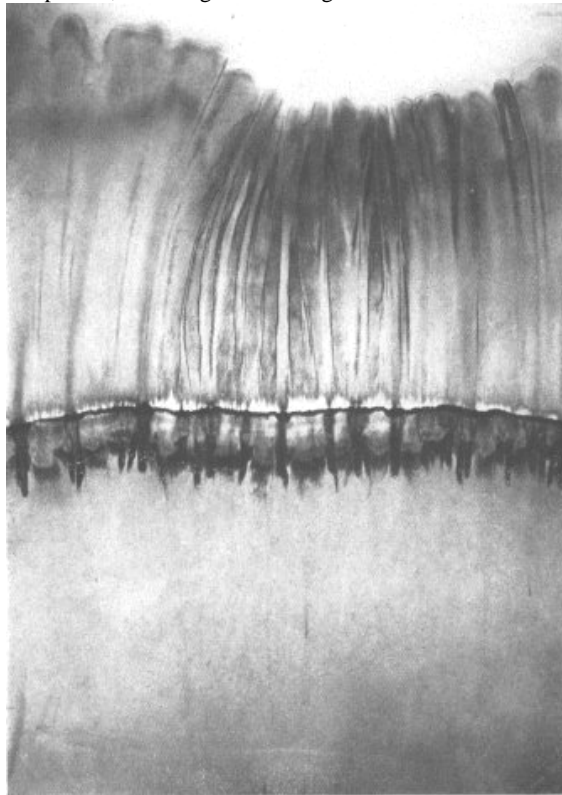


Plate VI, Silver Nitrate, picture taken by day and night

We now pass to the pictures taken before and after the solar eclipse: Plate VII Silver on June 27th, day and night. Plate VIII Silver on June 28th, day and night. Plate IX Picture taken on June 29th, the day of the eclipse. Plate X June 30th, day and night. Plate XI July 1st, day and night.



Plate VII, Silver Nitrate, 27.06.27, day and night



Plate VIII, Silver Nitrate, 28.06.27, day and night



Plate IX, Silver Nitrate, 29.06.27, day of the eclipse, day and night

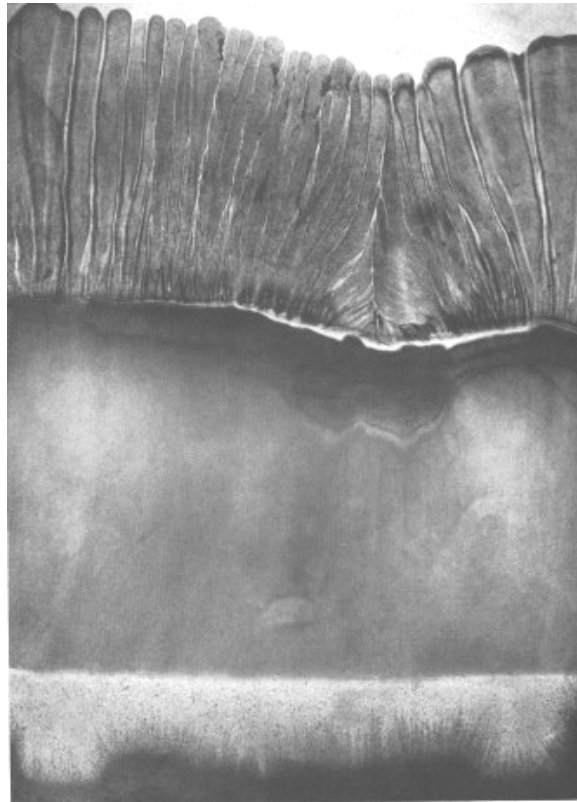


Plate X, Silver Nitrate, 30.06.27, day and night



Plate XI, Silver Nitrate, 01.07.27, day and night

The facts speak for themselves and there is no need to waste many words about them. On June 29th, the silver is not at all the same as at other times in the month of June. The pictures must be allowed to tell their own story and we must give ourselves up simply to the effect they produce. Each single picture portrays a definite force that is regulating the substance and is working in accordance with definite law in the inner structure of the picture. On June 29th, one gets the impression that something has fallen into disorder. Chaos is reigning; different forces are struggling together for the mastery. It seems to me that this arises as an entirely objective impression if, without any preconceptions whatever, one allows the pictures to work upon one. The impression of course is all the stronger when one has been able to observe the pictures not only on the two days immediately preceding and following the solar eclipse but a long series, taken, say, on the thirty days before and the thirty days following the eclipse. The impression made by this curious silver formation on June 29th is then much stronger. These sixty pictures of silver have all been reproduced and we should at any time be able to publish them. Some at any rate will certainly be able to be brought out.

EXPERIMENTS WITH GOLD AND SILVER

We have now considered gold by itself and silver by itself, in normal conditions and at the time of the solar eclipse. The eclipse comes about because the Moon passes between the Earth and the Sun. In the Cosmos, therefore, there is a very special relation and interworking between Sun and Moon. This interworking of the two heavenly bodies is also expressed when the two earthly substances representing Sun and Moon are combined. We must therefore unite chloride of gold and nitrate of silver at the time of the eclipse. Here again it would need a separate essay to speak in detail of the combined working of silver and gold but once more we must unfortunately limit ourselves to a minimum. Most wonderful forms arise when gold and silver unite — the form-building force of silver, of the Moon, working in the wealth of color inherent in gold! Plate XII is the colored reproduction of a picture of silver and gold together, taken on March 21st, 1927, at the beginning of Spring. The same concentration of both silver and gold — 1 gramme in 100 ccm. — is used and the solutions are mixed in equal quantities.

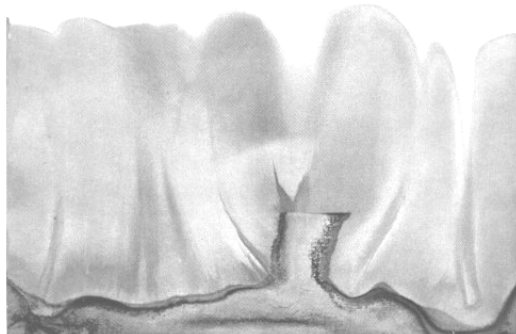


Plate XII, Gold Chloride & Silver Nitrate, 21 March 1927

Next we pass to the solar eclipse and see how it is reflected in the interworking of silver and gold. Plate XIII shows silver and gold on June 28th at 5. 19 a. m. and on June 29th at 5. 19 a. m. (beginning of the eclipse).



Plate XIII, top, Gold Chloride & Silver Nitrate, 28.06.27, 05.19h



Plate XIII, bottom, Gold Chloride & Silver Nitrate, 29.06.27, 05.19h, beginning of solar eclipse

It is really awe-inspiring to see from a study of Plate XIII how utterly differently silver and gold work on the Earth when up in the heavens the Moon is covering the Sun! The picture has no particular form or color. The colors are washed out, a greyish violet. The experiment was repeated many times on June 29th. The relation of gold and silver was practically normal at 2.30 p. m. on this day. Intimate knowledge of the working of these two substances enables us to say that the picture which arose at this hour still indicates a slight preponderance of silver. As a rule, the reaction of silver and gold brings about an immediate sediment golden-yellow in color. At 5.19 a. m. on June 29th this sediment was not golden-yellow but brown, soon darkening to black. The silver was working more strongly than the gold and to a certain extent this phenomenon was still apparent at 2.30 p. m. At 5.19 p. m. the reaction became quite normal and the picture had assumed its ordinary appearance. Plate XIV is a picture of silver and gold' taken on June 29th at 7. 16 a. m. towards the end of the eclipse. We have also added the picture taken on the same day at 5. 19 p. m.

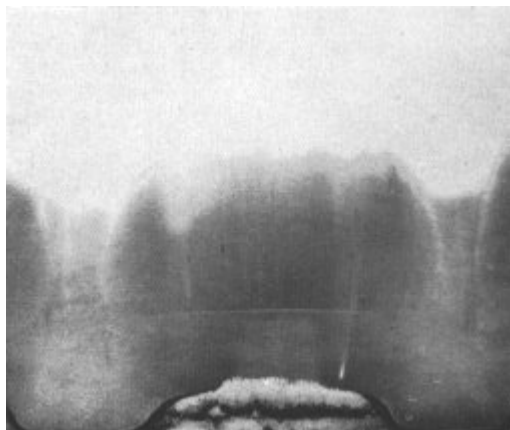


Plate XIV, top, Gold Chloride & Silver Nitrate, 29.06.27, 07.00h



Plate XIV, bottom, Gold Chloride & Silver Nitrate, 29.06.27, 17.19h

EXPERIMENTS WITH GOLD AND TIN

We were of course also interested to study the behaviour of gold in relation to other metallic salts during the time of the eclipse. As well as the experiments with silver, gold and the two together, we carried out a long series of others, with gold and lead, gold and tin, gold and iron, gold and copper, gold and mercury, etc. The relation of the gold to lead was the least disturbed, the longest and most intense disturbance being manifest in its relation to tin. At some future time more will be said about this experiment.

When solutions of gold and tin are united, they give rise to a highly interesting combination, well-known to chemists. This combination produces the so-called 'gold-purple of Cassius' but — I merely mention this in passing — not always. There are times when the most wonderful gold purple appears, immediately solutions of tin and gold are poured together and again there are times when absolutely nothing is to be seen. The golden-yellow changes into a light green but there is no purple. Now we observed that during the month of June, 1927, there was no purple reaction from gold and tin. The color of the sediment was only light green and after some hours there was a slightly darker precipitation. On June 27th the reaction of gold-tin was more vivid and after five minutes a light purple appeared. On June 28th the reaction set in very rapidly; the color at once became violet and the whole picture changed considerably. Plate XV is a normal picture of tin-gold in colored reproduction.

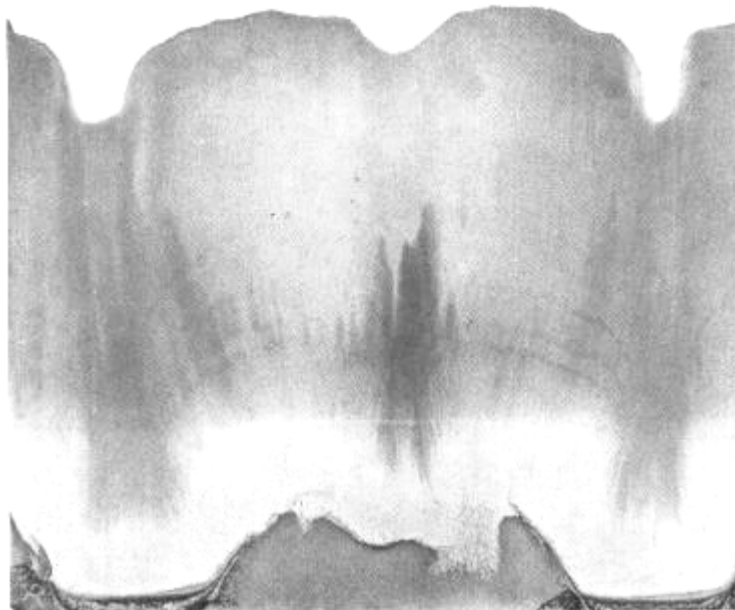


Plate XV, Gold Chloride & Tin Chloride, 08.06.27

In order to show more or less the general character of the pictures of tin and gold during the month of June, we show in Plate XVI those taken on June 12th and 24th.

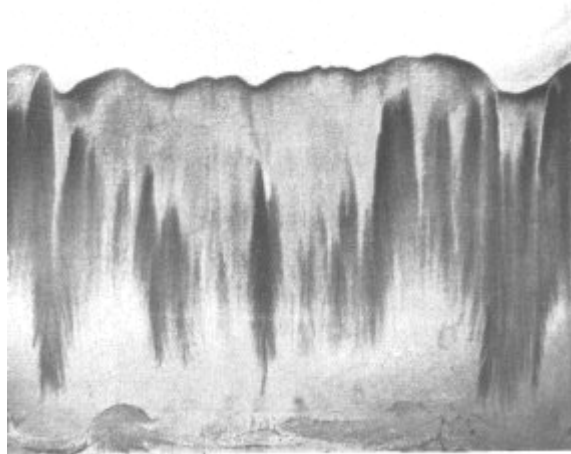


Plate XVI, top, Gold Chloride & Tin Chloride, 12.06.27

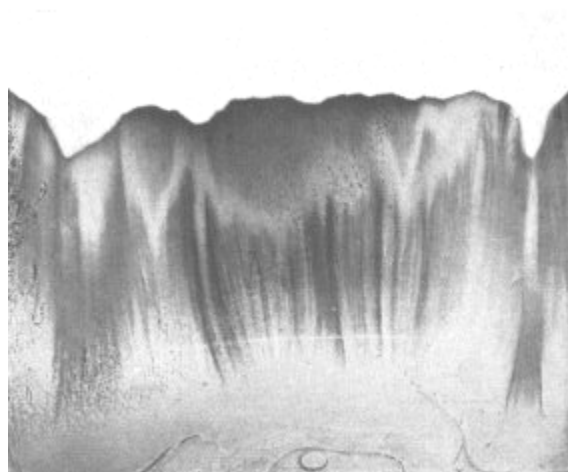


Plate XVI, bottom, Gold Chloride & Tin Chloride, 24.06.27

Plate XVII shows gold and tin at 5. 19 a. m. on June 28th after the strong reaction described above, also gold and tin at 5. 19 a. m. on June 29th at the time of the solar eclipse. The gold and the tin have scarcely contacted each other and the golden-yellow has changed into a blackish hue. At the same moment there is a strong precipitation. The solution becomes thick and appears as though coagulated.

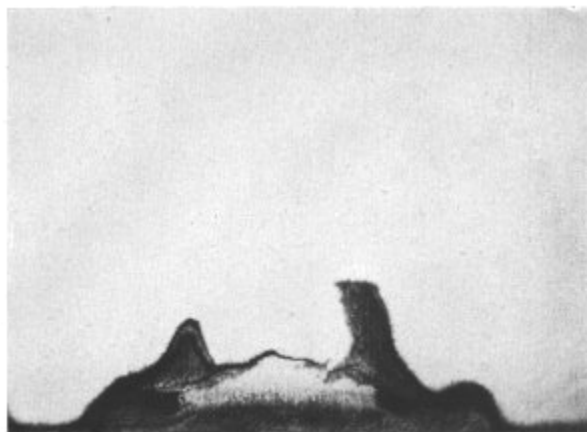


Plate XVII, top, Gold Chloride & Tin Chloride, 28.06.27, 05.19h

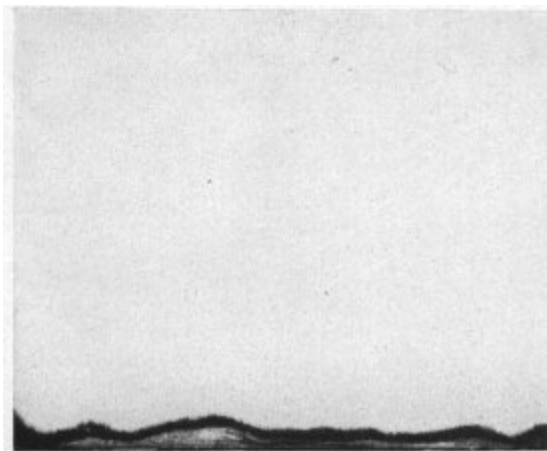


Plate XVII, bottom, Gold Chloride & Tin Chloride, 29.06.27, 05.19, at the beginning of the solar eclipse

According to the picture, the gold is not working. The fluid ascends to a comparatively high level. (Taking the experiments as a whole, the height attained by the fluids on the day of the eclipse was greater than usual, a fact which is probably explained by the stronger influence of the Moon.) The strip of filter paper, however, remains perfectly white. At the bottom there appears a dark violet line, practically horizontal. The pictures of tin and gold have, as a rule, something extraordinarily pure and delicate about them. To find this sudden abnegation of gold was, therefore, an event of great significance, for it can only be described as an abnegation of the gold. Instead of a beautiful picture with tones of yellow and violet produced by the gold in which are inscribed the workings of the tin-forces, there is merely an upward suction of empty water, as it were. The gold has been dragged down to the bottom and appears as a thick, black precipitation showing a thick black line. What is the explanation? We can only understand it if we avert our gaze from the glass containing the solutions of gold and tin and look out into the Cosmos, where we see that the Sun cannot send its rays to the Earth and it is dark even by day. The whole world experiences this cosmic event. Human beings were under mighty influences. Even the unsensitive felt themselves strangely affected. At this moment the whole of Nature changed. Shadows assumed lunar forms. A livid light fell upon everything. All living beings were in some way affected by the eclipse of the Sun. What wonder that dead substances too changed in their inner texture? The Sun's strength waned at the time of the eclipse. The working of gold on Earth was also weakened — weakened' to such a degree that tin effaced it. This experiment with gold and tin was also repeated, hour after hour, and we have reproduced a number of pictures. Unfortunately we cannot give the whole series for the number is too great. Already by noon, a few forms had appeared (Plate XVIII).

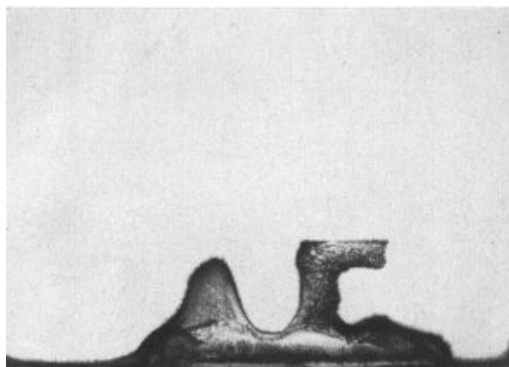


Plate XVIII, top, Gold Chloride & Tin Chloride, 29.06.27, 12.00h



Plate XVIII, bottom, Gold Chloride & Tin Chloride, 29.06.27, 14.30

These forms gradually increased in number as the picture taken at 2.30 p. m. shows. And so it goes on slowly (Plate XIX) as shown in the pictures taken at 4 p. m. and 5.19 p. m. The reaction was invariably very strong. The color is black from the front, in perspective a magnificent dark reddish purple.

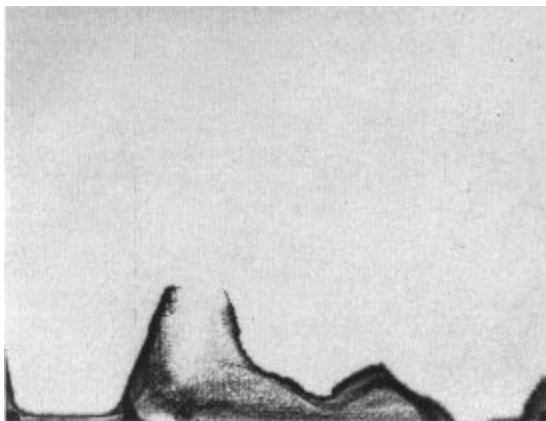


Plate XIX, top, Gold Chloride & Tin Chloride, 29.06.27, 16.00h

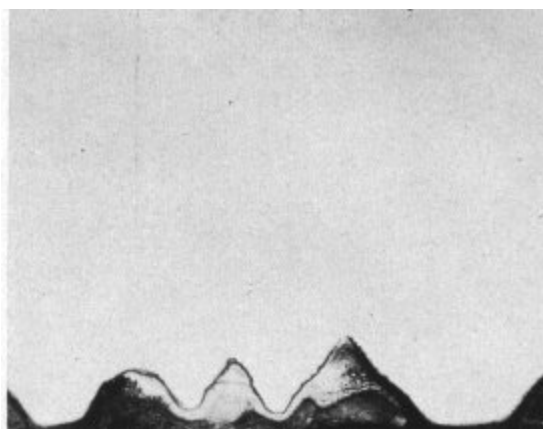


Plate XIX, bottom, Gold Chloride & Tin Chloride, 29.06.27, 17.19h

We said before that the disturbance between gold and tin was the most persistent. It is absorbingly interesting to look at the pictures and to follow this disturbance by stages until it ceases. On the day following the eclipse, June 30th, the forms below begin to break up to a certain extent; the gold emerges in a faint pink coloring of the paper and a contour appears higher up. Already by the afternoon of July 1st we find the appearance of rich forms, of a light purple color mixed with yellow and violet (Plate XX).

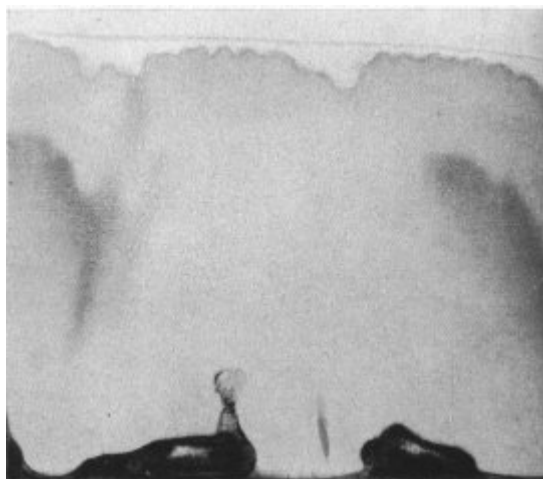


Plate XX, top, Gold Chloride & Tin Chloride, 30.06.27



Plate XX, bottom, Gold Chloride & Tin Chloride, 01.07.27

The pictures in Plate XXI were taken on July 2nd and 3rd. The reaction of the two solutions has abated to such an extent that after ten minutes a blue purple appears.

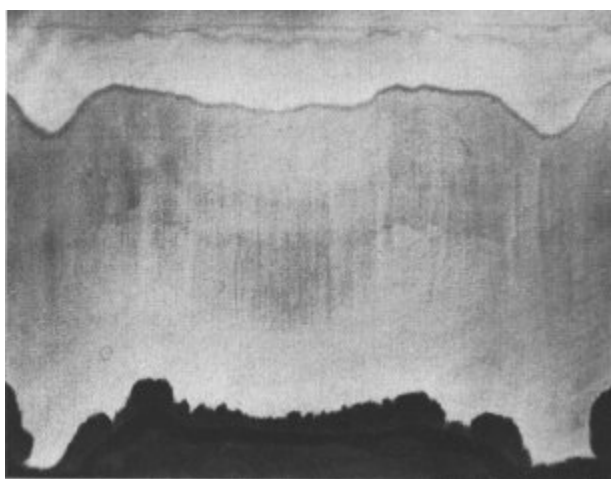


Plate XXI, top, Gold Chloride & Tin Chloride, 02.07.27

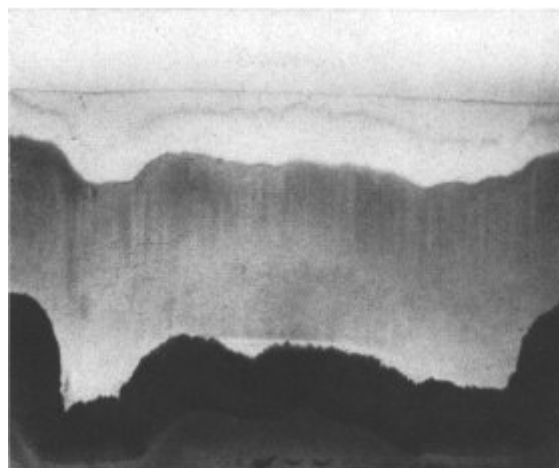


Plate XXI, bottom, Gold Chloride & Tin Chloride, 03.07.27

Plate XXII shows tin and gold on July 4th, by day and at twilight. The reaction on this date was a beautiful light purple. The picture taken by day is extraordinarily harmonious and gaily colored. The form appearing at the bottom is of a rich reddish-violet color. We have also given the picture taken at twilight because it is a beautiful illustration of the transition to the fully normal condition.

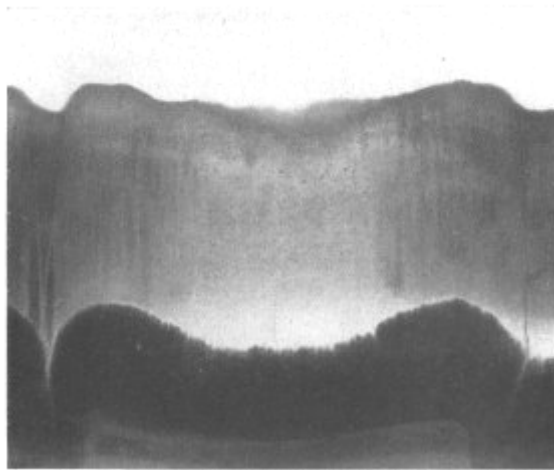


Plate XXII, top, Gold Chloride & Tin Chloride, 04.07.27, by day

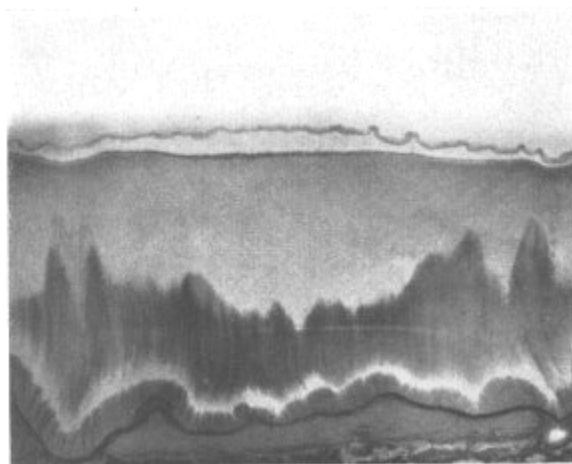


Plate XXII, bottom, Gold Chloride & Tin Chloride, 04.07.27, at twilight

On July 5th no reaction set in when the solutions of gold and tin were poured into each other. The color merely changed to light green and there was no subsequent appearance of purple. The picture is normal and absolutely identical with those taken on June 12th and 24th.

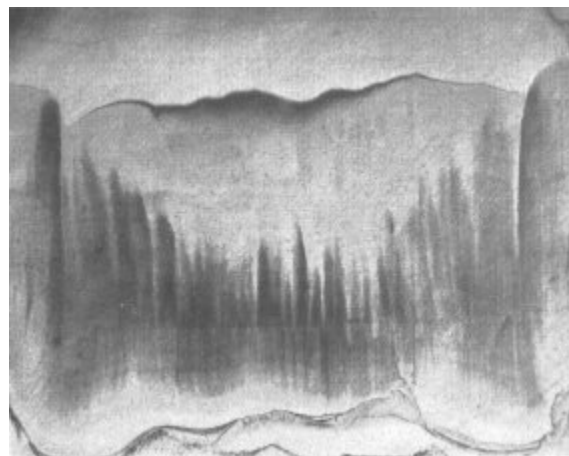


Plate XXIII, top, Gold Chloride & Tin Chloride, 05.07.27

On July 6th the working of the gold is still stronger. In the photograph this is to be observed in the dark tones of the upper part of the picture, whereas down below there is a negative form in the place where, on June 29th, the dark horizontal strip appears and on the following days the blackish forms. It is like a white erasion. Thus seven days after the solar eclipse, the ordinary relationship of gold and tin exists again.

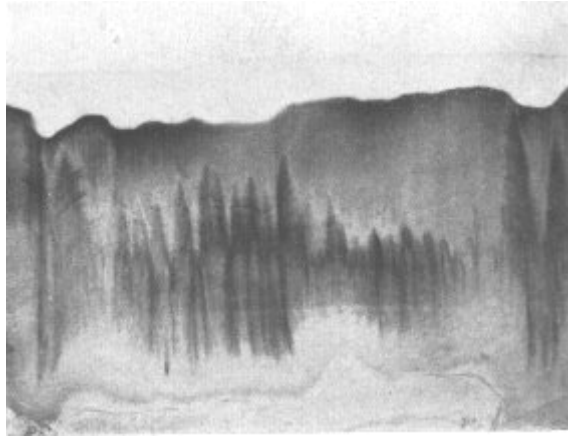


Plate XXIII, bottom, Gold Chloride & Tin Chloride, 06.07.27

The forces of tin overcame the gold at the time of the eclipse. It was to be expected that a re-arrangement of the proportions of the two substances in favor of the gold would set up the balance. I tried the experiment and found that by using six parts of gold, a picture was obtained on July 1st, resembling one taken on July 5th.. That is to say, six parts of gold and one of tin on July 1st, work just as one part of gold and one of tin on June 12th and July 5th. On July 6th one part of gold was a match for one part of tin because the Sun was able to pour more force into the gold.

And so with these experiments too we have again been able to show how cosmic forces work into the realm of the Earth. The gold on Earth and the Sun in the heavens belong to each other. When the physical Sun is darkened in the heavens, the spiritual Sun may shine in our hearts with all the greater strength if we are able to realize how the heavens live and move in the earthly world, as the "golden vessels, upward and down-ward climbing". If the Sun is shining in our hearts, we need have no fear of the outer darkness. For the path to the Spirit is in very truth a passage through darkness to light.