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# *FULCRUM*

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*The Science Journal of  
The University Of Science And Philosophy*



The cover painting & description following both copied from "In the Wave Lies the Secret of Creation."

## Humanity at the Crossroads?

This painting symbolizes the ultimate expression of the death principle in the form of an atomic bomb explosion and might well be titled *Humanity at the Crossroads?* It reveals the unseen paired expansive counterpart to the familiar mushroom cloud issuing from the intense hot explosive center of expansion. This paired expansive counterpart is also visible in the crater left by the explosion.

Centripetal poles at the sides coming into the center are suggested in infant form by a dark blue color. The

expansive centrifugal spiral poles are suggested by the dual mushroom clouds spiraling out from the explosive center of expansion. As the explosion progresses, the infant centripetal spirals gain strength as a vacuum replaces the intense outward radiative discharge.

The overall color of the painting is blue with violet suggesting the ultimate end of the expansion effect of the explosion, while the golden yellow and white illustrate the released heat from the radiative center.



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## Dialogue: Questions for the Next Issue

### Questions:

What is the geometry of the wave field and the core for any ( at least one) other element than carbon? Give an example or examples of “*the*” geometry for an element preceding and for one following carbon. Larry has already given us some of the answer in his discussion of element structure preceding and following carbon and in the male and female pairs of elements in each octave in this issue. I would like to see the geometric form or forms, so drawings please, and more details which I suspect exist.

## Some of the featured articles for the next issue

Part three & conclusion of dimensional equations detailing that all phenomena are the same phenomena; or a unification of Heat (temperature), Gravity, Electricity, and Light with an accompanying geometry by Timothy A Binder.

Transmutations of Ores by Robert Nelson of Rex Research.

Visions of the Future - Prophecy and divination by Timothy A Binder. ( This was postponed from the current issue until the next issue.)

## Dialogue: Responses to Previous Questions

### Questions:

- 1) How does carbon exhibit both cube and sphere geometry & at the same time?
- 2) Do the other elements and isotopes ( half tones ) exhibit more than one geometry and why?

## From Larry Tiegs

Question #1 & #2. How does carbon exhibit both cube and sphere geometry at the same time? Do the other elements and isotopes (half-tones) exhibit more than one geometry and why?

The sphere refers to the shapes of atoms; the cube to the shapes of molecules. Since atoms can't be seen, the simple answer to both questions is, they don't. What is exhibited is the molecular crystallization of the elements. For carbon it is the following:

- 1) Soot, black carbon, charcoal and coke are amorphous or noncrystal forms.
- 2) Diamonds are cubic. They are hard because their unseen atoms are solid dense spheres. Science says diamond atoms are arranged in 90 degree three-dimensional patterns that prevent the atoms from slipping over one another which results in their hardness.
- 3) Graphite is carbon atoms arranged in flat crystalline slippery layers composed of 6-sided sections and used as a powdered lubricant and in pencils.
- 4) Fullerenes, discovered in 1985, were named after Buckminster Fuller. The 60 carbon atom "buckyball" looks like a geodesic dome or soccer ball made up of 5-sided joining sections. Fullerenes also form in long tubes with closed ends.

Russell's cosmology does explain and illustrate the shapes and nature of the elemental atoms. He explains that everything in nature is tonal; that matter is created in octaves just as sound and colors are; that nature's keyboard has nine octaves; that each octave springs from and disappears into an inert gas, the keynote of that octave; that the octaves are a natural progression from outer space toward Earth's core.

Carbon is to the elements what middle C is to music. Carbon is a perfect solid core sphere gyroscopically spinning within a cubic wave field. Carbon represents nature's one perfect form. Its solid core gives it the highest melting point and hardest density of all the elemental atoms. The cores of all the other elements are holes of varying sizes, except silicon which is all but closed. The relatively low pressure of the Earth's surface and the carbon octave makes it easy for plants, animals and humans to compress H<sub>2</sub>O and nitrogen into carbon, just as middle C is easy to compress on all instruments.

Each octave is a stage of growth, an orderly progression of compression from birth, youth, young adult, maturity, past maturity but prime, aging, elderly and death. Each aging octave string gets shorter causing increases in frequency, weight, mass and pressure.

Within each octave is a complete cycle from birth to death. Each octave begins and ends with an inert gas, the keynote. Each cycle breaths-in and breaths-out, tensing and relaxing, increasing and decreasing density and vitality. The atoms within each octave are either, or:

- 1) The red spectrum, alkaline, positive male elements, winding-up, prolating from rings, spirals and spheroids (sounds like a siren warming up, increasing in pitch) trying to hit the perfect tone for that octave.

- 2) The blue spectrum, acid, negative female elements, unwinding, oblatting, expanding into spheroids, spirals and rings from the wave amplitude of that octave into silence (a waning sound).

In the aging carbon octaves the atoms attempt to close their holes as the atoms grow shorter, bigger, heavier and softer on the surface, bulging at their equators as their surface melts, radiating gases and cosmic rays outward into space.

The increasing pressures of the older carbon octaves complex their crystal shapes. Crystals are incomplete cubes just as spirals and spheroids (egg shaped) are incomplete spheres. Within each octave the winding-up elements simplify their crystallization as pressures increase. Crystallization complexes as pressures relax.

Mother nature creates all elements in balanced and opposite pairs as sodium and chlorine. When these balanced pairs unite, they void their individual identities and crystal shapes to form a cube. Sodium and chlorine unite into the cubic crystals of salt.

A soprano trying to hit a two-octave "high C" may produce some off-tones or split-tones first. Russell calls these isotopes, not full mathematical steps or octave tones. The high C of carbon is cobalt in the 6th octave which produces 5 isotopes each side of cobalt. The triple high C, rhodium also produces 10 isotopes. The quadruple high C of the 8th octave, lutecium, produces 24 isotopes. The quintuple high C of the 9th uranium octave only lists 5 isotopes on the positive side but Russell suggested as many as 20 or more would be found. These 9 octaves of harmonic mathematical ratios are found in his 1926 Russell elemental charts, presented more simply in a 1962 chart, page 830 of the Home Study Course.

Each octave produces four equal but opposite (male/female) notes. The centering amplitude element as carbon is formed by the collision of a male and female element. This double tone forms two hemispheres of one tone, hence the octave is usually considered seven notes. It is really nine counting the inert gas.

The octaves are a natural progression from outer space toward Earth's core. Each higher octave is a cube one eighth the volume of the previous one, taking eight times the pressure to create the same tone with a frequency twice as fast. There is a harmonic progression from the light pressure of the space octaves to over 100 million pounds of dense pressure per square inch deep within the Earth's crust.

Russell's first two and one-half octaves are the invisible and still unknown space gas octaves. Hydrogen in the 3rd octave is the lightest known element and dominates space above 1900 miles from Earth. The next lightest, helium of the 4th octave, dominates above 560 miles. The increasing pressure of the lower atmosphere compresses the atoms of nitrogen, oxygen and carbon of the 4th octave into molecules of  $H_2O$  and  $CO_2$ . It is these elements that give rise to organic life on Earth's surface with a compressive barometric pressure of  $\pm 14$  pounds per square inch.

Compression continues to increase into the Earth's shallow crust and deep oceans producing the 5th silicon octave. This octave has seven of the most common and available elements.

The 6th, 7th, 8th and positive half of the 9th octave have decreasing volumes and much greater pressure. Obviously these octaves of elements were formed deeper in the Earth's crust under enormous pressures and later brought to the surface through volcanic action and continental upheaval.

\* \* \* \* \*

A quick note on the Bernoulli's Theorem of gravity based on the venturi principle mentioned in the last Fulcrum.

Bernoulli is saying that the sound coming from a guitar string is not made by the compressing spinning vortexes spiralling back and forth around the string, colliding at the center into a dense ball of sound. He is saying, in essence, the guitar string is still and the sound is being made by a "space wind" (in truth, nonexistent) blowing almost parallel to the string. Oh my my my!

WHAT'S GRAVITY?

A PUSH!

There is only one force in the universe - compression. Compression is a push, forward or backward, up or down. Peel rubber in your car and you'll be compressed backward. That's a recognized G-force. Hit the brakes and you'll be compressed forward. That's an unrecognized G-force. Shoulder two elephant guns pointed in opposite directions and squeeze the triggers. You are now standing at the "center of compression" improperly called the "center of gravity." Matter doesn't pull. Matter doesn't attract. The only force is compression. Compression toward a point is a centripetal implosion. Compression from a point is a centrifugal explosion. Each one causes the other simultaneously and becomes the other sequentially in rhythmic balanced interchange. All compression is two-ways. What man has called "gravity" is compression one-way.

The old science: One-way motion.

When you blow up a balloon it inflates. When you let the air out it deflates. This is why we have been taught that energy only runs one way - downhill; that heat is energy and can only cool; that you can't get more energy out than you put in. Too bad some science teacher didn't show us how to get water out of a jar without letting the air in.

Russell's science: Two-way motion.

What if, air never left a balloon and water never left a jar? What if, the balloon is square and as it is deflated the air never leaves? How could it deflate? Easy. Just compress the atoms inside into a dense ball, compressing from two opposite directions. That's two-way implosion or fusion. It is two-way gravitation, concentration and compression toward a point. The cube deflates and the small ball or sphere inflates. Then over time, the ball deflates by radiating and the cubic pressure inflates. When the ball appears we call it life. When it disappears we call it death. The dance continues forever. We just can't connect the sequences. Grasp this and you understand Russell and his premises:

- 1) THE ONE. Light at Rest, the zero of space is everything, the fulcrum, not nothing.
- 2) THE TWO. Light in Motion, zero borrowed and extended two-ways creates waves (suns - daylight) and wave-fields (black cubic Light-crystals).
- 3) THE TRINITY. Black cubic Light-crystals and their zero centered suns are two halves of one whole, the sound and the instrument.
- 4) THE MUSIC. Space is a fluid crystal, an orchestration of black cubic wave-fields, flowing noninterferingly yet structurally firm.
- 5) THE NOTES. Space is billions of forming and deforming suns, suns children, planets and grandchildren, moons, each encased within their own vastly enormous cubic wave-field crystals.
- 6) THE OBSERVER. We are riding within a black crystal, compressed onto its centering sphere, Earth, orbiting as interlocking gears of a clock with all the other planets on a gradually expanding path away from the sun, as we look through our black crystal at night into the reflected glittering specks of light of billions of sun-centered black crystals, each light one interconnected cell of the cosmic body.

A comment on Light at Rest.

There is only One Essence - Light at Rest. It is everything. It is still. This One Essence is infinite, nondual, motionless without vibration. As human beings we can not see or sense it. It is invisible and unmeasurable. It is formless, qualityless, the undivided and unmanifest. It has many names as Light, Zero, Rest and the One. Illuminated masters as Russell and those who've had near death experiences call it "being in the Light." In moments when their consciousness is still, in a state of pure awareness they know this Cosmic Essence as luminous efflorescent white, fluid like yet rock solid. Russell calls it "still white magnetic Light." Our endless questions about this One Essence are akin to a fish asking, "What is water?" It is within and without us, from which we emerge and into which we return. It alone is. To have known even a flash moment of self-realization, an at-onement with this essence is to know joy, peace and love. The world's great religions have evolved around mystics who experienced this divine love. They call this One Essence many names including God, The Father, Supreme Reality or Divine Mother. To know this One Essence as the source of all matter is science. Science calls it Light. The Bible says, "God is Light. God is Love." To Russell and all knowers of Reality, religion and science are One. Russell said Jesus was the greatest scientist. Scientists who persist in asking questions are destined to become mystics.

The following cosmogony diagram may help to clarify the word Light, as distinct from day light, the red and blue color spectrum and the absence of day light, blackness. Some Indian words from the Hindu philosophy are included. All masters have the same knowing, varying only in degree and focus.



PARABRAHMAN - BEYOND THE SUPREME REALITY

Vyakta  
Differentiated  
Qualities:

Omnipresent spirit, being, Purusha  
Omniscient knowing mind, Chidakash  
Omnipotent energy, Karana

ONE GOD - BRAHMAN  
CREATOR  
SUPREME REALITY

Avyakta  
Undifferentiated  
Qualityless

LIGHT IN MOTION

Saguna  
Manifest  
In Movement  
Creation:

THE UNIVERSE

ONE ESSENCE - LIGHT  
"White Magnetic Light"  
Cosmic Substance  
Prakriti

LIGHT AT REST

Nirguna  
Unmanifest  
Motionless  
No thing - zero

Visible  
Material  
Matter  
Spheres  
Day light, illuminating,  
Sattva  
Red-Blue spectrum, dividing  
& multiplying, Rajas  
Darkness, motion opposed &  
resisted, Tamas

Invisible  
Spiritual  
Space  
Cubes  
Blackness  
All motion begins in  
and ends in zero/rest/  
silence.

CONSCIOUSNESS IN MOTION

MAN:

SOUL: Individual seed/history, Atman

- MIND: 1) Consciousness, I am, Chitta  
2) Witness, knower, observer, Vyakta  
3) Brain: understanding, memory, thought,  
reason, Manas  
4) Intelligence, Buddhi  
5) Ego, sense of I-ness, Ahankara  
6) Imagination, creator, Kalpana

- BODY: 1) Person as body, Vyakti  
2) Personality, in the moment thoughts,  
actions, reactions, Vyaktitva  
3) Character, one's true nature, Swarupa

SPIRIT: Avyakta, that which makes it all  
possible, the life within the seed.

ONE ESSENCE - LIGHT  
Pure awareness/Being  
Sat-Chit

CONSCIOUSNESS AT REST

MAN'S REAL SELF:  
Ananda, bliss, being  
Pure awareness  
Brahmasmi, "I Am the  
Supreme", Cosmic  
Consciousness

From Timothy

Larry's response to the questions gives us all a good review of Russell's Cosmogony as well as a look at some of the conventional ways that carbon is viewed - all legitimate views. All views short of the One are incomplete but give us their own particular advantage and view point. Larry went right to the core of the answer I was looking for on the first page of his article fourth paragraph second sentence where he said, "Carbon is a perfect solid core sphere gyroscopically spinning within a cubic wave field". For me that sentence implies all the answers to the questions. I will be explicit about some more of the answer as it appears to me.

The salient point about Larry's sentence is that carbon is a "perfect solid core sphere gyroscopically spinning within a cube wave field", and it is a wave field reflecting centripetally towards a center with ever varying pressure zones towards and centrifugally away from that center. Or simply put carbon is both a cube and a sphere at the same time; just as I am both male and female at the same time. Where carbon exemplifies "perfect" male/ female balance, I am predominately male and less so female. In this sense I am like lithium on the male side of the spectrum of the hydrogen octave and a female is predominately female and less male just as fluorine the mate to lithium is so and on the female side of this same octave.

It appears to me that the sphere does not just refer to the shape of atoms and the cube to the shape of molecules; rather it refers to the shape of everything and anything in the sense that the cube/sphere is an archetype and variations of this archetype can be observed in all things. Or, an atom and a molecule both have cube/sphere characteristics. In this sense there cannot be a cube without a sphere. In the same way all the elements have "more than one geometry at the same time" in the sense that they all have and they all are both wave fields and cores or what I am calling fields and filaments when describing them as vortex whirls in the series on unifying all phenomena - which could have been more aptly titled *recognizing* the unity of all phenomena. In Russell's Cosmogony the only element that is a "perfect" cube/sphere is carbon. All other elements are wave fields that are not true cubes and are cores that are not true spheres.

This all illustrates the thesis of the series on "unifying" all phenomena by emphasizing that here is no *absolute separation* of the wave field from the core in an element just as there is no separation of Gravity from Temperature, from Electricity, from Light. Like left and right sides to a body they all come as a package. All of this leads me to pop the following question for the next issue. What is the geometry of the wave field and the core for any - at least one - other element than carbon? Give an example or examples of "the" geometry for an element preceding and for one following carbon. Larry has already given us some of the answer in his discussion of element structure preceding and following carbon and in the male and female pairs of elements in each octave in this issue. I would like to see the geometric form or forms and more details, with drawings please, which I suspect exist.

Larry, it appears to me that in your comment about Bernoulli's theorem as a gravity model you say that your interpretation of it as a gravity model is that it in essence says or means that a guitar string would not move but only the air ("space wind") about it; using the guitar string as a supposed analogous model. I am as puzzled about your comment as you appear to me to have been about Bernoulli's theorem as a gravity model.

Incidentally as far as I know Bernoulli did not use his theorem about fluid flow pressures in a pipe as a model for gravity. Scudder Klyce in *Universe* made that connection and it appears to me to be a valid mechanics. A mechanics demands that there be motion and three parts to this motion or a lever system with a two way interchange via a fulcrum. Bernoulli's theorem does have those elements and the interchange and flow between say the earth and the sun does exhibit what was described by the theorem - *and of course there is more*. I would like to hear more from you about your view on this as our interchange always enriches my own.

Your comments about gravity have enriched my view and stimulated the following comments: You say there is only one force in the universe - compression. I agree if you are using the word compression to mean both compression and expansion. If not, how can there be compression of some real finite actual scientific thing without a simultaneous expansion of a real finite actual scientific something? You use acceleration as a 'recognized' G force and deceleration as an 'unrecognized' G force. Recognized or not I agree they are both G forces and they are both simultaneous and together- never absolutely separate -never only - and they are as a whole process compression/expansion. Even when I peel rubber and accelerate the leading part of me slows down or decelerates while I am accelerating due to the resistance to the acceleration and vice versa. If you like you can call them compression. I suggest capitalizing the word Compression in that case to signify that you are giving it a One meaning or a meaning without an opposite which is not the ordinary use of the word compression. Ordinarily it has no meaning without understanding the concept of expansion to also be a force in the universe. You give tacit recognition to this when you say that all compression is two ways, but it appears that you don't want to allow the use of the word expansion or attraction in discussing "force" or gravity.

My shoulder between two elephant guns is also like being at the periphery of two vacuous black holes that are "attracting" the bullets meant for the elephants and on hitting them they finally reverse potential and direction. If those vacuous potentials did not exist the gun could not fire; its opposite in pressure would contain the explosion. If the vacuum becomes strong enough it will release the explosion without the firing pin in the gun being necessary. The journey from the rapid expansion of the gunpowder power slowing down through air resistance up to being stopped in the elephant was one of being "attracted" to the lowered potential the journey had from ignition to being stopped. This attraction takes work to create it. I have to compress something else to create it. If I compress something I create a vacuum in something else that is really a part of that compressed thing in that they are inseparably connected and occur simultaneously.

I guess the point I keep making is that compression *always* exists with expansion and similarly with all words that point to two way simultaneous processes and they always occur simultaneously and always are ever varying in relative preponderance. If there is no attraction then there is no repulsion and so on and on and on.

Larry I like your real life models for illustrating the Russell Cosmogony. They have helped my understanding of the principles many times just as they have helped me understand the answer to these questions. Page 830 of the *HSC* is reprinted here to aid us all in following Larry's discussion.

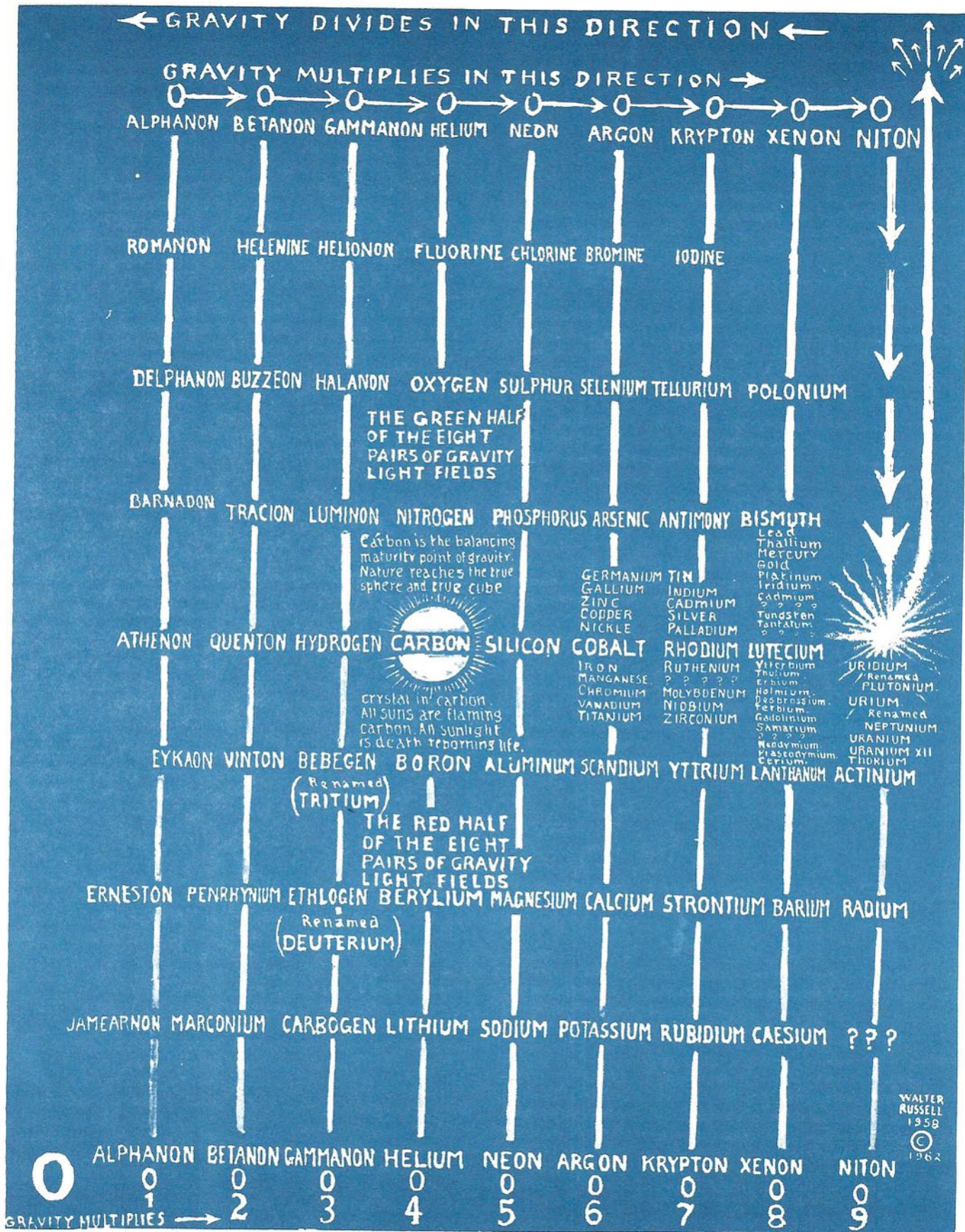


FIG. 70

THE WALTER RUSSELL CHART OF THE ELEMENTS OF MATTER (The 1960 comprehensive chart)

## Letters to the editor

Sara Shannon  
176 E 3 St  
NYC NY 10009  
212 674-1659  
Feb 18

Dear Tim,

GLAD to talk to you yesterday. Let's have occasional brain-storming sessions to sha<sup>e</sup> and see what we can do to speed up the actualisation of the process of transmutation in order to clean up the rad waste mess.

Yesterday we said --

1. you will do a one page summary/update on transmutation that could be in the WR Newsletter, the Fulcrum, the War and Peace Newsletter and any others with the suggestion that readers xerox and send it around to their friends. (send to me a copy and I'll give it to the War and Peace ---)

2. I wish to expand exposure of an overview of the rad. situaiton I wrote - Hazards of Low Level Radiation - see enclsoed typed and on a disc. Use this anywhere you like. I'd like to see this in a small booklet or handout. We need to convey the overview. That it is not just all these seperate problems. And then this could lead to acceptance of transmutation. If a person "GOT" how far gone it actually is. I havent put my name on as author - thinking that the information is from all of us, and is more of a message than something written by a person.

3. *the person you may know to oversee the RADALERT website project ---*  
Transmutation needs to come in now cuz 3 major things in the works behind the scenes right now: --

1. the plan to recycle the military rad waste from TN. into commercial metal products which might include building materials, cars, stoves, batteries, kids dental braces --- etc.

2. the plan to transport the rad waste from all the nuclear power plant sites to a "parking lot" in Nevada, which would mean 17,000 trips per year by road and rail.

3. the plan to irradiate our food (which might include organic foods) with rad cesium and cobalt, which of course neutralises the vital aspect of the food, and I recently heard that food irradiation does not kill all the E-coli, but leaves 1 to 3% which can then proliferate --- again --!!!

So with these outrageous plans waiting in the wings we can certainly use transmutation. Just in time!!!

with all best wishes to you



Sara Shannon

March 1, 1990

His Holiness, The Dalai Lama  
Phekchon Choling  
McLeod Ganj. 176219  
Dharamsala Dist. Kangra  
H.P., India

Your Holiness,

I contact you to propose that you make a statement on the most important danger confronting our planet and all humans. Possibly this could be a group statement, including other world religious leaders.

With this in mind, I respectfully engage your attention to bring to you some extra-ordinarily critical information: the most outstanding threat to the global environment and life on Earth is low level radiation. The major source of this poison (on top of the atmospheric bomb tests which left fallout residue through 1963) is the on-going "allowable emissions" and leaks from the 480 operating nuclear power plants.

The unacknowledged key to survival of Earth is the immediate stop to nuclear power and all its related waste and military implications. For it is the very low level, continuous and cumulative amounts of radiation releases from the everyday operation of these plants that is, along with other contributing factors, causing birth defects, infant mortality, mental retardation, heart ailments, diabetes, rampant cancer (leukemia now being the first cause of death for children in the U.S.A.), and previously unknown infectious diseases.

The enclosed book, DEADLY DECEIT, documents and gives references for the escalating illness and suffering which correlates with radiation fallout to a degree never before recognized.

The mechanism underlying the impact of small amounts of radiation is based on the fact that radiation-caused 'free radicals' are more efficient at lower doses or intensities, thus causing much more damage to the immune system, which results in the deterioration of the physical and mental health of the newborn in each generation, leading to biological degeneration and possible extinction.

Beside this, there is abundant documentation for the previously unconsidered effect of radiation on trees and plankton, which are our two main sources of oxygen and absorption of carbon dioxide, and have started to die out to a discernable degree. A loss of oxygen would bring an end to all human life on earth.

One must acknowledge that this is a religious issue of global dimensions. It is the religious leaders who are in a position to call attention to the great offense we are committing against all creation.

As a Nutrition Consultant in New York City since 1978, I have studied radiation and its health impact. I published a book in 1987, DIET FOR THE ATOMIC AGE. I understand that government funded research cannot make an unbiased evaluation of the known data and apply it to make changes. I can connect you with world renowned scientists who have documented this.

I appeal to you, and ask you to communicate to other religious representatives on Earth, so that everyone may comprehend the dire turning point at which we have arrived, and that with other religious leaders you make a statement insisting that those in control stop all production of plutonium and the associated fission products, including the use of military nuclear power, excepting a small facility for medical purposes. The specific format of this statement remains to be decided, whether it be mailings or telegrams to officials and politicians, or some other means such as a widely publicized assembly of religious leaders and concerned scientists.

At this time there are many environmental groups with their circumscribed focus; but none attending to this most overwhelming issue.

There have been environmental symposiums in the last few years and one recently in Moscow. However, what good does it do to discuss garbage disposal and planting trees when the house is on fire?

The true facts have been repressed, suppressed and erased.

Only a powerful force such as His Holiness, The Dalai Lama, as well as other religious representatives of the Absolute Reality, can present the truth, in the name of humanity, to stop the inevitable omnicide if we continue on the nuclear path.

Yours respectfully,

Sara Shannon



ཕྱི་ཤེས་ལོ་གཞི་ལུ་

OFFICE OF HIS HOLINESS THE DALAI LAMA

July 11, 1990

Ms. Sara Shannon  
176 East 3 St.  
New York, NY 10009  
USA

Dear Ms. Shannon,

This is further to Mr. Chhime R. Chhoekyapa's letter to you of March 23, 1990 regarding low-level radiation. Thank you for the documents which we received through our office in New York.

After studying the issue, His Holiness has consented to touch on the topic before an appropriate forum in the near future.

We thank you for bringing such an issue of global importance to the attention of His Holiness the Dalai Lama.

With my warm regards,

Sincerely yours,

Bhuchung K. Tsering  
Deputy Secretary

1998. as far as I  
have heard the subject  
was not further discussed.  
He was quoted as saying: "This can  
not be true."

Sara's experience in sending her letter to the Dali Lama and his response is similar to what the Russell's experienced as evidenced in Dr. Russell's archival letter to Mr. Babson and so much more. Their message has been largely simply ignored by the world to the world's grave detriment. Virtually everything they have predicted we would experience from accumulated radioactivity has come to pass; even if it has occurred more slowly than they estimated. If you have worked at this like the Russells did and like I have for years, you know that you can expect these responses and you also know that you can never, ever, ever give up - if you really understand what it means and know that it is the most important environmental challenge facing all of us. The good news is that like the Cube and the Sphere - Transmutation is Here! But we still need to develop the technology and get the world leaders in government and industry to understand it and implement it. With that thought in mind I won't give up on the Dali Lama yet and will attempt a communication to him myself. The same goes for the the Pope, Bill Clinton, Nelson Mandela, and others. For those of you that feel motivated to do something I suggest that you write your own letter and send it and perhaps any of the material in this or other issues that you feel illustrates your point and ask them to use their position and authority to act appropriately; just as Sara did the Dali Lama.

To the Editor:

APRIL 14 98

An April 9 front-page article reporting that 12.5 percent of the world's plants are in danger of becoming extinct should be viewed in a larger context.

Similar studies show that approximately 11 percent of the world's birds, 25 percent of mammals, and perhaps 20 percent to 34 percent of reptiles, amphibians and fish are in danger of extinction. This suggests that between 10 and 25 percent of the world's species are endangered. Ecologists who worry about the loss of biodiversity are not crying wolf — unless, of course, they mean the red wolf or the Ethiopian wolf, both of which face extinction.

DAVID S. WILCOVE

Washington, April 10, 1998

*The writer is a senior ecologist at the Environmental Defense Fund.*

To the Editor:

The public unfortunately is not very familiar with the consequences of the loss of the genetic wealth of plants — a wealth that includes genes resistant to pests, environmental stress and disease (front page, April 9). With today's technology we have incredible possibilities to expand agricultural yields, and using plants for medicines contributes millions of dollars to the world economy.

Plant diversity deserves the same recognition we grant to charismatic fauna; after all, no bamboo means no pandas.

BRIAN BOOM

Vice Pres. for Botanical Science

New York Botanical Garden

Bronx, April 10, 1998

ny Times 4/9/98  
**One in Every 8 Plant Species  
Is Imperiled, a Survey Finds**

By WILLIAM K. STEVENS

At least 1 of every 8 plant species in the world — and nearly 1 of 3 in the United States — is under threat of extinction, according to the first comprehensive worldwide assessment of plant endangerment.

The assessment, which required more than 20 years of work by botanists and conservationists around the globe, added nearly 34,000 plant species to the World Conservation Union's growing Red List of imperiled organisms.

The survey, made public yesterday in Washington, found that among the plants most at risk were 14 percent of rose species, 32 percent of lilies, 32 percent of irises, 14 percent of cherry species and 29 percent of palms. Many species of coniferous trees, and many plant species found in island nations, were also judged especially vulnerable.

While endangered mammals and birds have commanded more public attention, it is plants, scientists say, that are more fundamental to nature's functioning. They undergird most of the rest of life, including human life, by converting sunlight into food. They provide the raw material for many medicines and the genetic stock from which agricultural strains of plants are developed. And they constitute the very warp and woof of the natural landscape, the framework within which everything else happens.

The census of imperiled plants should be taken not as an exact measure of the situation, leaders of the survey said, but rather as a first, rough approximation.

And some acknowledged that the

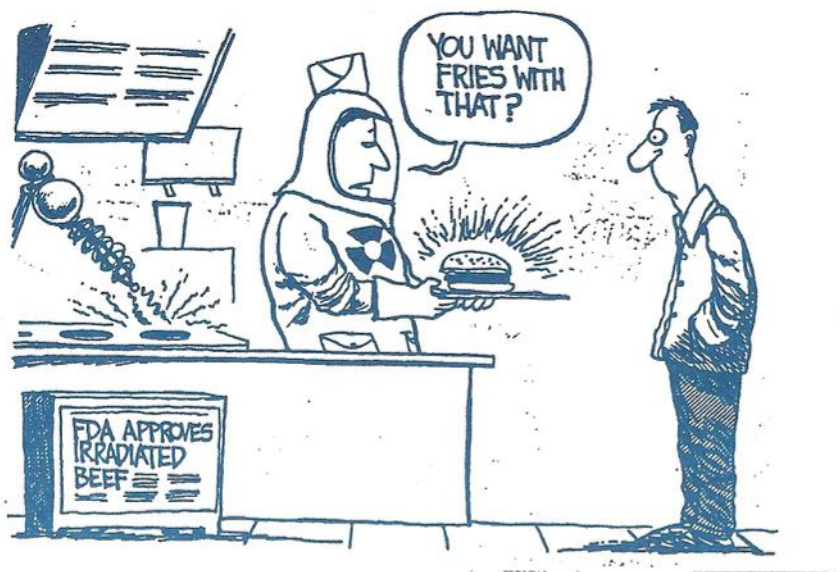
majority of species were "secure and widespread," in the words of Dr. Bruce Stein, a botanist who is a senior scientist with the Nature Conservancy, one of nine scientific and conservation organizations that participated in drawing up the list. Furthermore, Dr. Stein said, some plants were placed on the list simply because they are rare, not because their numbers are declining or their habitat is threatened.

Nevertheless, of the world's 270,000 known species of plants, the 12.5 percent found to be at risk is a huge proportion, said David Brackett

*Continued on Page A24*



# Update on Citizens Radiation Monitoring Project



March 24

Barbara White a student and friend of the University will be coordinating all readings sent in by citizen monitors from around the country. She and /or USP staffer Carol Monroe will post these readings on the USP web site and they will be sent to the Earth pulse Press and from there to be further distributed to their and other web sites. For more details on how this project works see the last issue of *Fulcrum* Vol. 5 No. 3. You will send your readings to us every two weeks by postal or E-mail and we will post them. I will give a summary of the readings in each issue of *Fulcrum*. In essence here is how it works: You must make a \$295 investment in a **Rad alert** radioactivity detector and turn it on for 10 minutes daily and record the reading. Every two weeks you will postal or E-Mail the University your readings and Barbara or Carol will post them on our web site and then send them on to Earthpulse press. To

be informed is to be prepared to take action and the more people there are that know exactly what the ambient radioactivity level is in their area, the more likely they are to demand changes in our systems of power production etc. You could also contact your local newspapers, radio and TV stations with the data and a message about the alternatives to nuclear power and the development of the technology for transmutation of radioactive wastes all of which need to be implemented to change the situation. Read Dr. Russell's archival letter and the rest of the related material in this issue of *Fulcrum*, consider the facts -meditate on them - and ask yourself *what else* can I do in addition to this to help save our planet and all life on it. *Become connected to and be a part of those who are working with the greatest environmental challenge our civilization has ever faced!*

# Featured articles

## Report of experiments on the octave multiplying assembly of lenses for power production of Walter and Lao Russell as described in their Home Study Course.

In unit 11 of their *Home Study Course* Walter and Lao Russell give diagrams and explanation of how they believed the problem of solar power could be solved. They thought that their principle for multiplying power by compression in octave wave progression could be applied to magnifying lenses to increase heat and light of the sun or an oxyacetylene flame. Page 842 of the *Home Study Course* summarizes their thinking and shows how they believed the lenses should be aligned to create additional power. That page is reproduced as figure 1 at the end of the article.

They had hoped by this design to get more energy out of an oxyacetylene flame than the flame produces itself or there could be no reason to run it through any number of lenses if the goal were not to get more heat and light out of the flame than could be obtained by simply heating a container of water directly next to the flame to produce steam to drive turbines etc. So it is clear they believed they could get more energy of heat ( and light) out of the lens system than the flame gave alone.

Years ago after much thought about the idea I had skepticism about it; as it was obvious to me that the function of a lens or any system of lenses is simply to concentrate the light and heat in an area to a smaller area; but that it did not increase the total amount over what was in the more expanded area. I related this to other student friends including Walter Baumgartner who had told me that he had constructed a lens system ( I saw photos of it ) and was told by the lens makers that it could not work ( for reasons to be explained later in this report ) but he had them make the lenses anyway and sure enough found they did not work.

I have had access to the University's files and found that Dr. Russell had ordered some lenses and worked on demonstrating his idea but found no report or mention of what he had discovered in whatever he did to demonstrate this idea. As the concept has been continually presented in the *Home Study Course* as if it really works I decided that in spite of the fact that I did not believe it worked and that my friend had claimed to have demonstrated it did not work, that I needed to prove it one way or another and let students know how I did it and the results so they can judge for themselves the validity of the idea. Toby Grotz who has worked with

me in virtually all of the Russell Science Research helped design, set up and test the lens system shown and described in this article. While I believe that the idea as they presented it does not work and the experiments to be described I think demonstrate this, I still leave my mind open that the principle may be used in other ways to generate energy more efficiently and possibly even over unity.

In some earlier unpublished drawings that I believe perhaps Chester Hatstat and I later published in *Fulcrum* regarding the "Russell Optico Dynamo Generator" Dr. Russell had a lens diagram arranged so that the focal point of each lens focused at the center of the next lens. The problem with this I found out from lens makers (as Walter Baumgartner's lens makers told him ) is that it is impossible to construct lenses of the sizes/shapes to conform with the octave multiplying principle and have them focus in this way. In any case it appears that he later changed his mind about where the lenses should focus to be as shown in the *HSC* (figure 1 ). I was told that we could construct a series of four lenses of the sizes he there suggested and placed as he diagramed them in figure 1 , but that while they each would individually have the focal lengths needed to all focus at the desired point, that it is impossible to get them to do so together as arranged in the octave multiplying geometry. These are shown in Figure 2 as case 1. Case 2 is the impossible set as the lens in that shape can't focus in that way; or lenses of that diameter can't have that focal length. The reason that even with case 1 a series won't all focus on the same spot even though they will individually, has to do with how each lens bends the light as it passes through the lens and this distorts what otherwise one might think would allow them all to focus on the same point as Dr. Russell had thought. In spite of this I ordered the lenses and arranged them in the geometry as per the specifications in the *HSC* and used a projector to run heat and light through them and also used an oxyacetylene flame, as the Russells advised, to test the idea just as they had described it. Pictures that follow show the lens arrangement, specifications, and their effects with projector light and oxyacetylene flame.

The way to get a series of lenses to focus on a point are described in a textbook titled *Concepts of Classical Optics* by John Donovan strong. In any case even with any arrangement of lenses all focused to a point or not it appears they will not deliver more light and heat than what the source gives them; they will only concentrate or expand the amount of the source depending on if they

are convex or concave lenses. I am reprinting a page from this textbook on magnifiers and microscopes that begins the discussion about this aberration of focal lengths with multiple lenses as figure 14.

Now lets look at the experimental set up and procedures Toby and I employed to verify this.

Figure 2 is the order given for the lenses showing their sizes, shapes and focal lengths all as specified in the *HSC* including the impossible case 2 set which we obviously did not get

Figures 3 & 4 show the lenses all mounted in the proper octave wave multiplying ratio (inverse square law) where the biggest lens is separated from the next by 1 centimeter and the next lens from the third by a half centimeter and the third from the last by an eighth centimeter. They are shown in side and end views.

Figure 5 shows the light pattern focused through all the lenses on what was their individual focal points and hoped for collective focal point. The light pattern was not just on the focal point but spreads out around it as the bending of the light rays through each successive lens distorted the common focal point.

Figure 6 shows the the biggest lens focused on its focal point.

Figure 7 shows the lenses with a projector focused through them to the hoped for common focal point and the heat recorded in front of the first lens which was 28 degrees C.

Figure 8 shows the same projector lens arrangement with the temperature recorded at the hoped for common focal point at 29 degrees C.

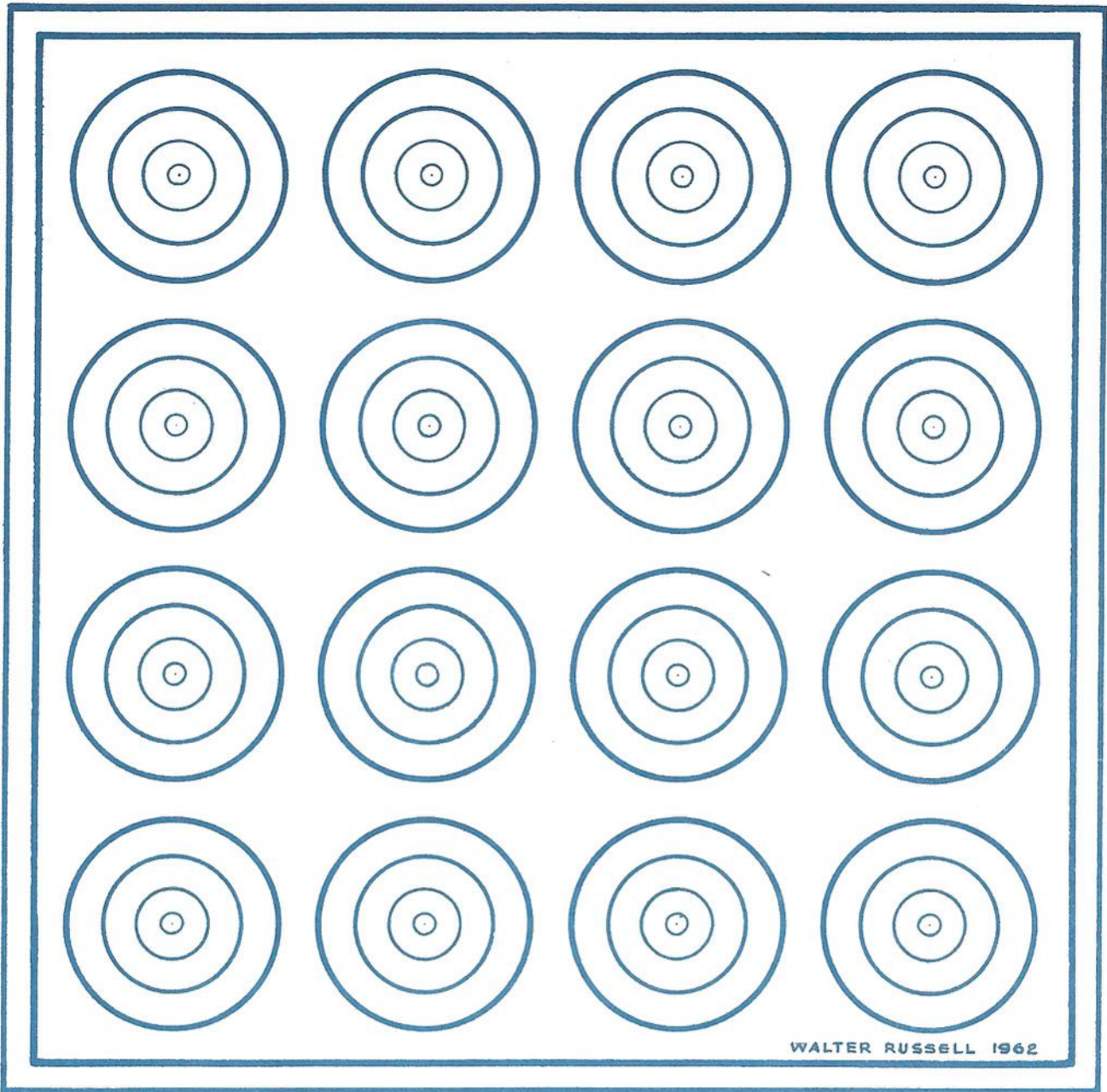
Figures 9 & 10 show this same arrangement with an oxyacetylene torch providing the heat and light source. The temperature in front of the center of the biggest lens system was 38 degrees C and at the hoped for common focal point temperature was at 23 degrees C. Curiously the projector showed at least some (one degree) increase in temperature where the torch showed none.

Figures 11 & 12 show my hand in front of the lenses with the torch as close as I could tolerate it and then with the torch in the same position and my hand at the hoped for common focal point. Obviously the focal point temperature was not multiplied to any significant amount as I could leave my hand in it with no discomfort.

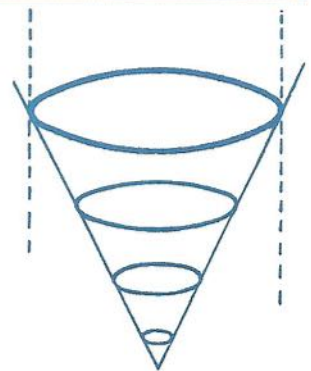
Figure 13 shows my hand at the hoped for common focal point with the torch moved much closer to the first lens to get as much heat from it as I dared without breaking the first lens. My hand could detect some small increase in heat but nothing much compared to the heat at the front of the first lens.

This set of experiments is enough to prove for me that the concept of using magnifying lenses in this fashion is not valid, even though the one set of measurements with the projector did show one degrees C increase of temperature at the focal point. Even with that increase of temperature it would not have been even close to the temperature that would be obtained by putting the flame directly at the spot one desired to heat. In these experiments we brought the flame as close to the lenses as was tolerable to my tactile senses as we did not want to crack the lenses with excessive heat; so it would have been more effective in heating anything to simply put the torch at the point desired rather than through the lenses.

Have we overlooked anything in this experiment? If anyone has any additional experimental evidence or suggestions regarding this energy producing idea of the Russells I look forward to hearing it.



**FIG. 72** One bank of an octave-multiplying assembly of lenses for solving the problem of solar energy, now given to the world in 1962 by Walter Russell. You are looking down through a 4-octave series of lenses such as you find on bar magnet drawing in Fig. 57. They represent the light which comes from the sun, but that light is diminished by the light of the sun having traveled through space for 90 million miles and its continuity having been interrupted by night and by intermittent clouds, for light does not shine in the darkness. Because of this discontinuity, transmutation by solar energy is quite impossible. A better light because of its whiteness and because of no interruptions by long periods of night and clouds is the oxyacetylene flame, as we have formerly stated.



*Figure 1*

**OPTICAL EXAMPLE**

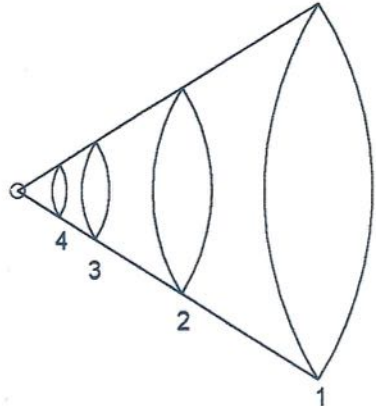
Dimensions relative centimeters  
 distance and diameter  
 ratios must be observed

Plastic or commercial grade glass  
 Dia +0.0/-0.05  
 center thickness +/- 0.1  
 centering 3-5 arc min

No Coatings

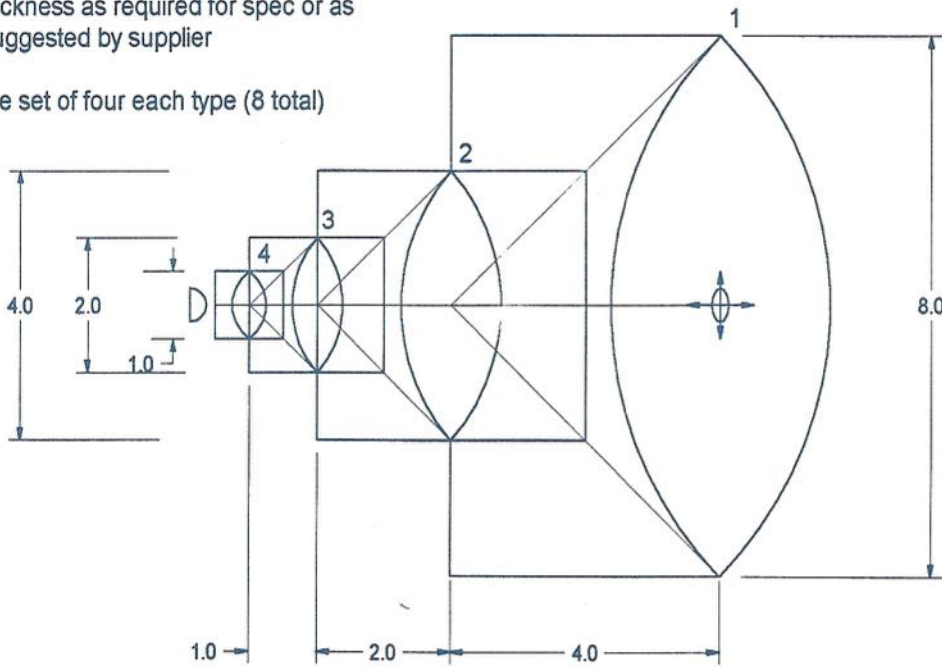
Thickness as required for spec or as  
 suggested by supplier

One set of four each type (8 total)



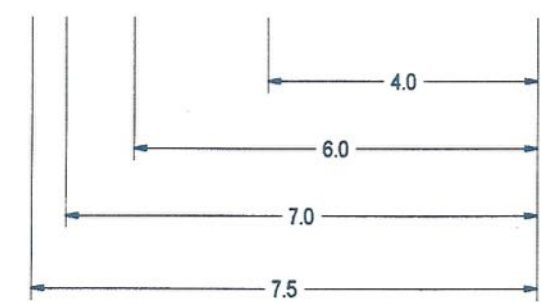
**CASE 1**

Lens #	dia.	f.l.
1	8	7.5
2	4	3.5
3	2	1.5
4	1	0.5



**CASE 2**

Lens #	dia.	f.l.
1	8	4.0
2	4	2.0
3	2	1.0
4	1	0.5



*Figure 2*

Wireless Engineering, Inc. 760 Prairie Avenue Craig, CO 81625 (970) 824-6834 wireless@Amigo.net	DWG. NO. Lenspec	
	TITLE Russell Test	
Chk'd	DATE 10/14/97	REV 2
ENGR.T. Grotz	SCALE cm/mm	SHEET 1 OF 1

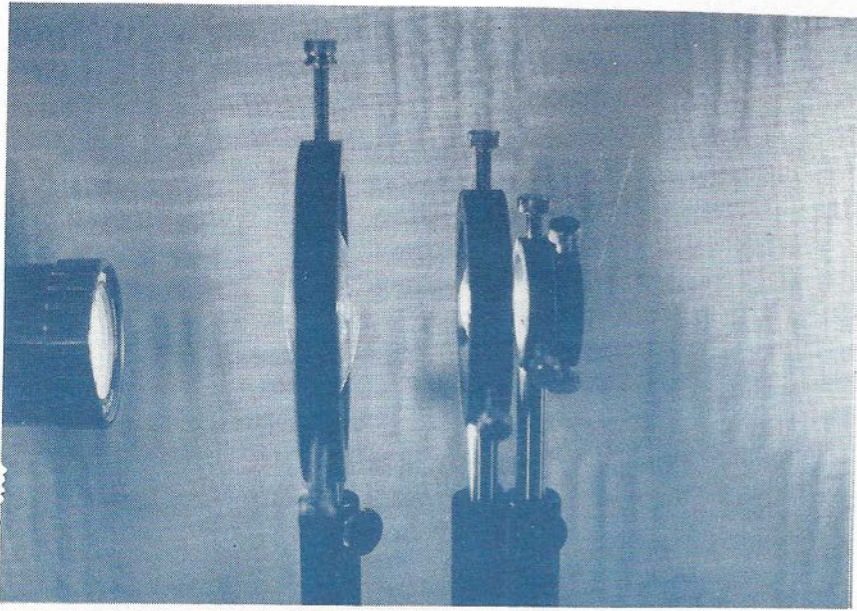


Fig. 3

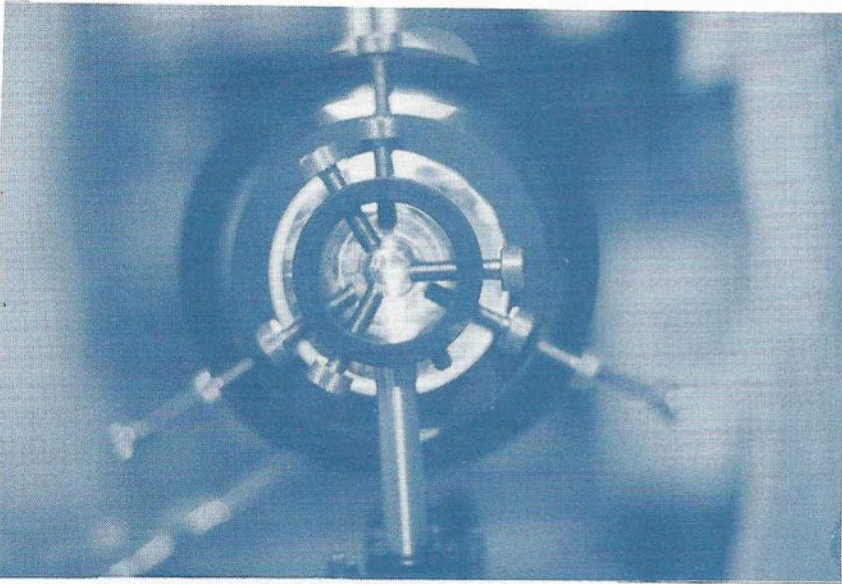


Fig. 4

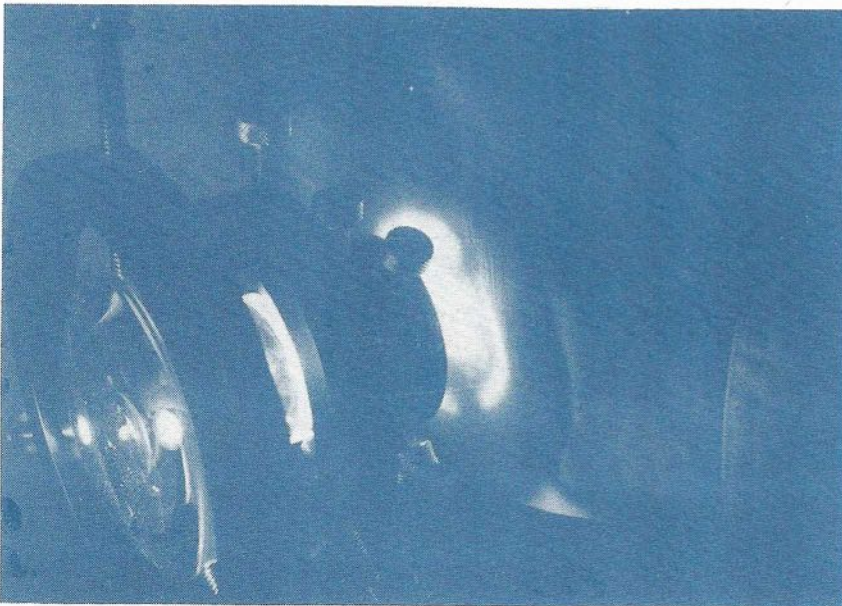


Fig. 5

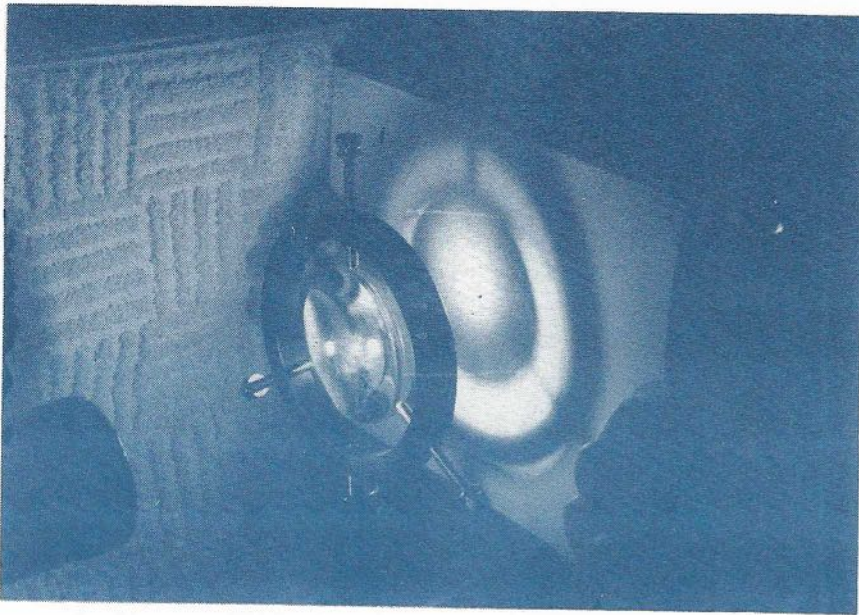


Fig 6



Fig 7

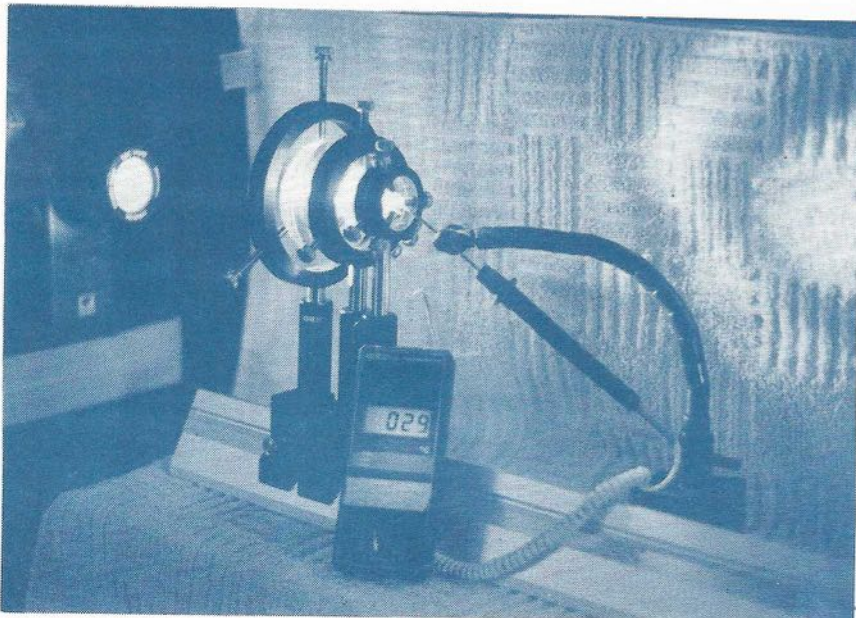


Fig 8

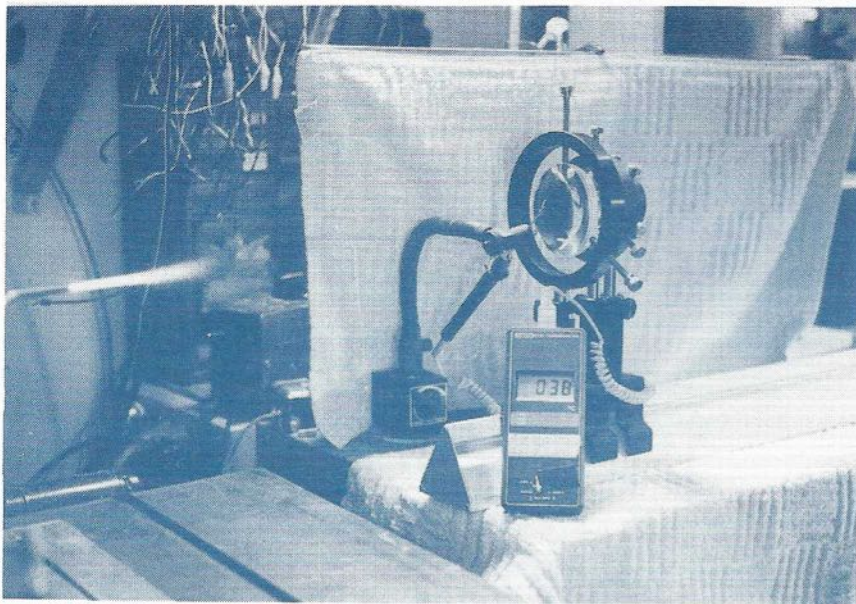


Fig. 9

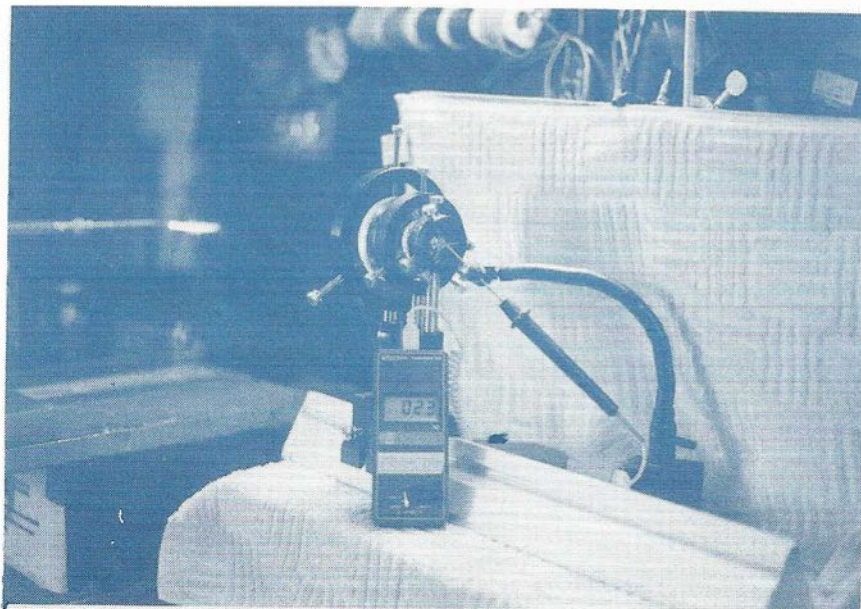
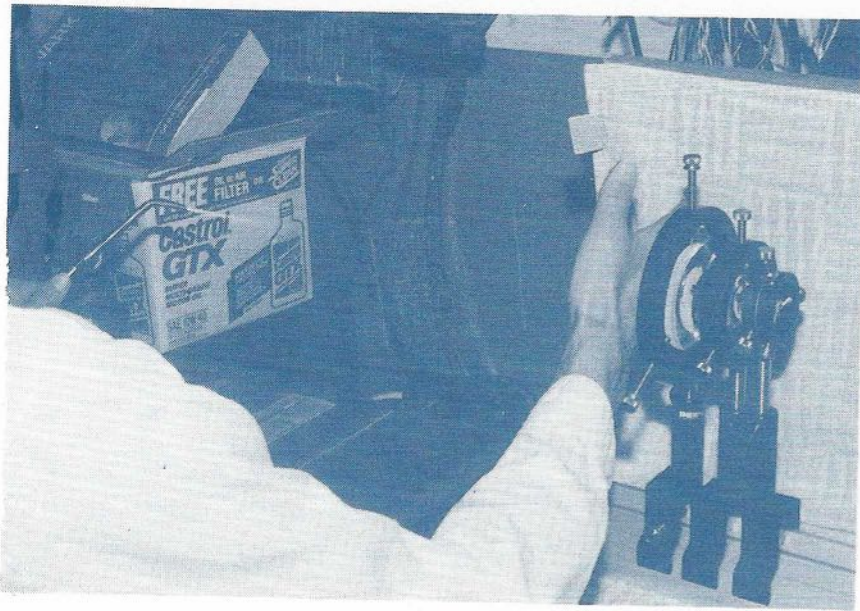
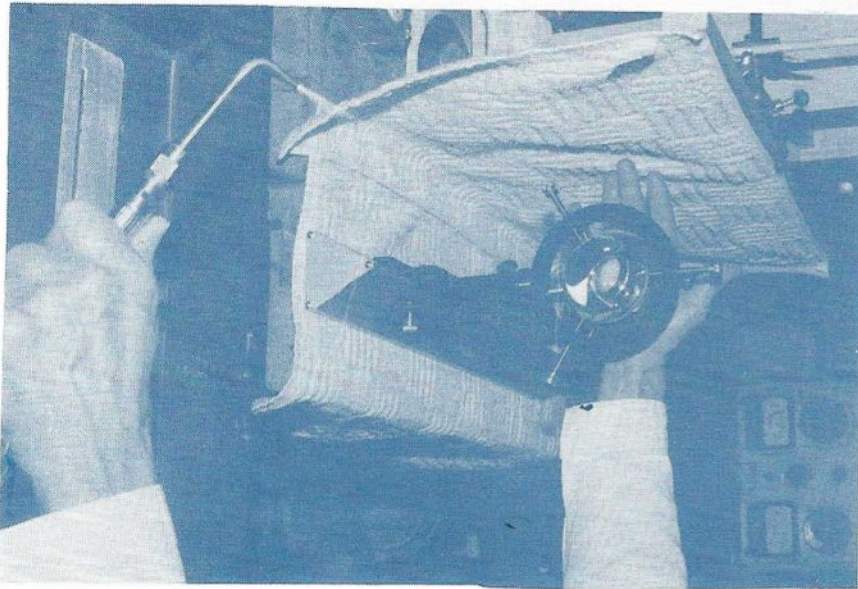


Fig. 10





*Fig. 11*



*Fig. 12*



*Fig. 13*

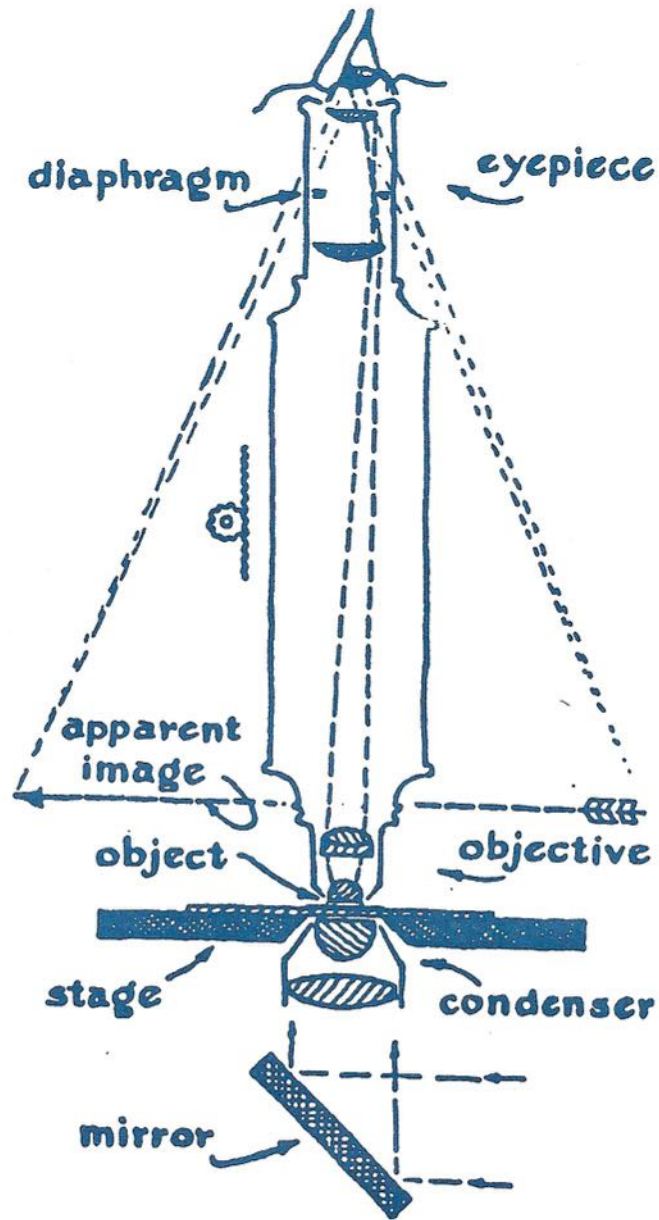


Figure 14

**Part Two - Explanations of dimensional equations detailing that all phenomena are qualitatively the same phenomena: or a unification of Temperature, Gravity, electricity/magnetism, and Light with an accompanying geometry by Timothy A Binder.**

In the last *Fulcrum* I used a vortex whirl as a model for gravity mechanics, showing how any motion would necessarily result in some form of a whirl. In this issue I will show how electricity/magnetism is also the result of vortex whirls. In the next issue I intend to complete this discussion and unification by showing how Light and Temperature (heat) are also vortex whirl formations.

As a reference point for the discussion about whirl-atoms and EM phenomena that follows please refer to the following figure 1 for visual reinforcement and the

following discussion of the figure. In figure 1 we have either flow or movement 1) around the ring or filament axis; 2) flow or movement along or parallel to the ring axis ( always changing its "parallel" direction as the ring turns ) and 3) a flow *relative to the ring* that is in the radial direction or "straight" lines (locally) perpendicular to the ring (also called filament) axis at any point of it extending radially away from the axis in any such perpendicular direction. Flow #1 is mostly "magnetism" or the flow in all other directions than current flow. Flow #2 is the current flow and flow #3 is technically the "displacement" direction in Maxwell's orthodox electrical theory. This flow #3 also results in or really they all result in the direction of flow of the main axis of the whirl and this direction is what I suspect is conventional gravity.

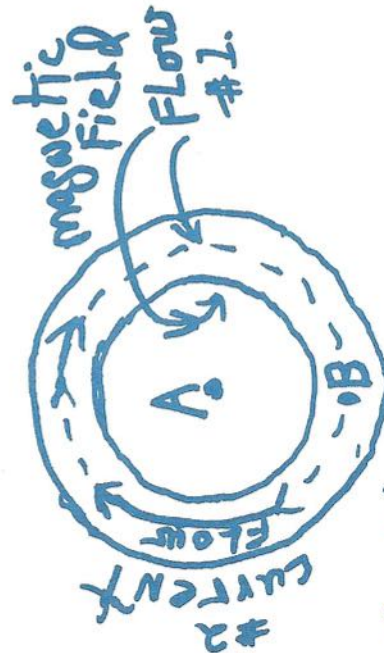
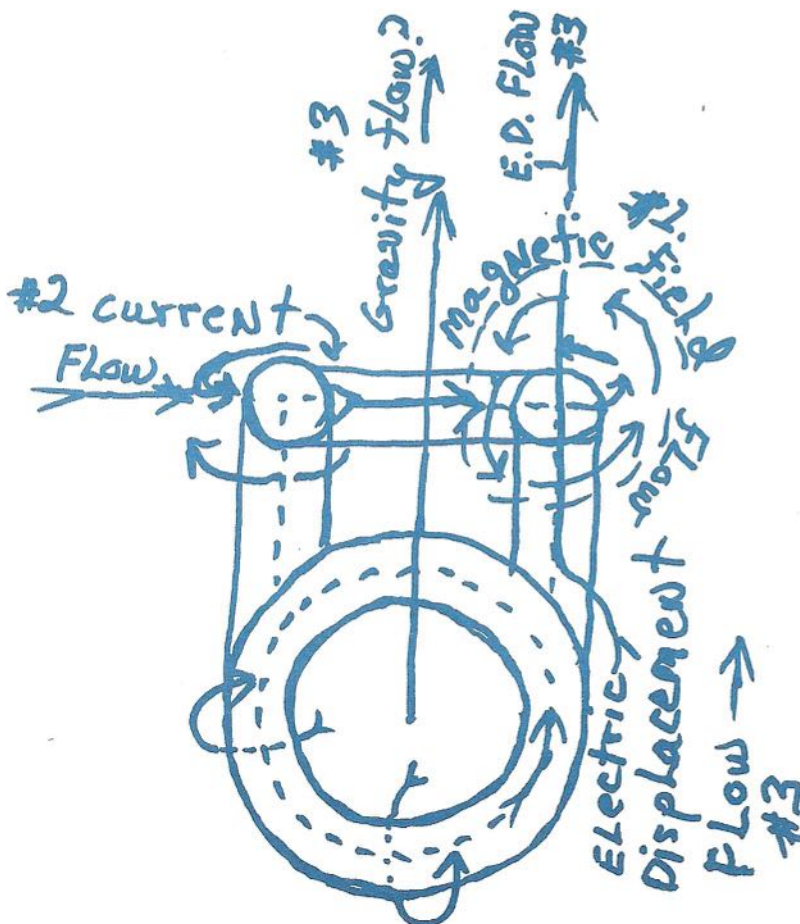


Figure 1

- #3 A = Gravity Flow coming up out of page
- #3 B = Electric Displacement Flow coming up out of page

Just as Gravity is the movement of the *ether*, or to us the smallest most imperceptible parts of the One continuous substance, all other phenomena are the same vortex whirl phenomena on bigger (or smaller) scales or from differing points of view. The old metaphysical saw "as above so below" is true and applies to this discussion as does Walter Russells description of a holographic universe in the following words taken from the Secret Of Light :

*" Everything that is is of every other thing that is. Nothing is of itself alone. All things are indissolubly united. ....Say thou to him, each thing is everything and each is everywhere. For I say that all things are the same thing, for all things are universal.....Say thou to him, all things occupy the same space, and each thing occupies all space... all things extend from all things and are extensions of all things....likewise I say: all things center all things and are involved in all things...verily I say, every wave encompasseth every other wave unto the One; and the many are within the One, e'en down to the least of waves of me.....And I say further that every thing is repeated within every other thing, unto the One.....And furthermore I say, that every element which man thinketh of as itself alone is within every other element, e'en down to the atom's veriest unit... When man queries thee in this wise: Sayest thou that in this iron there is gold and all things else? thou mayest answer: within the sphere, and encompassing it, is the cube, and every other form that is; and within the cube, and encompassing it, is the sphere, and every other form that is"*

I have substituted the words Gravity, Light, Temperature, electricity & magnetism for the "everything's", "things", "its", "cube", "sphere" and etc. in the above inspired words from Dr. Russell's *Divine Iliad* and find that it underscores in an intuitive fashion what I am attempting to illustrate in more technical prose.

Electrical phenomena are larger whirls (than gravity whirls) considered as unit collections or they make electrical circuits. Sometimes we will see them as whirls one by one, at others as continuous whirls and with an additional changeableness of point of view as either 1) we view it as if we are in a static part of the phenomena looking at the collection of whirls as outside of us and moving or dynamic (giving us magnetism): or, 2) we view it as if we are in that moving dynamic part of the phenomena and look at this collection of whirls as not moving in relation to us as we tacitly or logically move with it (giving us static electricity).

What is perhaps novel or surprising about this new point of view is orthodox views of electricity are not usually explicit about taking these two points of view and thus we could be surprised when at the end there pops up a

$K-1/2 U-1/2$  that is equal to  $V1$ . In the preceding  $K$  means the variable numerical coefficient of static electricity or the "constant" specific inductive capacity;  $U$  means the variable numerical coefficient of dynamic electricity or the "constant" permeability; and  $V1$  means the speed of light.

To understand more what it is I mean in saying that the point of view about static and dynamic electricity is novel compared to conventional electro-magnetics and what point of view in this case means let us consider an analogy. If we are in say a larger whirl such as our galaxy and we are in a part of the galaxy field and from there viewing and say describing the galaxy filament and our solar system we would then conventionally omit saying anything about our motion in the field as we are moving in and *with* the field. This then gives a point of view in which the *field* is static.

If we consider the reactions of two or more adjacent whirls the fields must of course react by friction and/or synchronization. If the resulting series of reactions is perceptible we name it electricity such as in rubbing a glass rod across a fur. (We could say that the reactions of a single whirls' field and filament is electrical too, and it is, but we don't usually recognize this as such.) This makes the word (and the process of ) electricity a relationship word and a force, but of course as force cannot exist alone and must manifest because or as two parts of Universe or matter move relative to each other, then we can realize and name electricity as a word for the matter or the "Many" aspect of Universe ( the other remaining aspect being the "One" or unified and not explicitly naming any internal structural aspect of Universe). Thus we can see electricity as 1) a relationship or process and describe it with or as a relationship word 2) as a movement of parts of the Universe or as matter and describe it with or as a many word and 3) if we wish we can see the whole Universe as a One electrical phenomena or describe it as or with a One word. The Russells chose to describe the Universe with and as a One word or phenomena as Light. And as we shall see all phenomena is Light- and it is electricity/magnetism, Temperature (hot/cold/), and/or Gravity as well.

If it is true, as I feel I have demonstrated in the preceding issue's article, that all motion is vortex whirl motion and therefore all phenomena are vortex whirls, and all are moving relative to each other, then it follows that electricity is a universal phenomena: and, the same for Light, Temperature, Sound, Gravity, etc.. This was at least one of the theses of Dr. Russell's *The Universal One*. And, *The Home Study Course* on page 526 Has the following statement "Radiation creates electric current. Radiation is deduction. So does generation. Generation is induction. One compresses, the other expands, but it is the same light wave current. Any movement of any

kind creates a light wave current, even the movement of your little finger". In this statement the Russells have equated radiation and generation with both the Electric current and Light; and in numerous other places they have equated these all with Gravity and Temperature; therefore it is clear to me that they were in agreement with the thesis of this series of articles. I am attempting in this series to clarify this with a mechanics that was not given with the above statements or in any of their works as to just how they all are the same phenomena and yet we sense them as different. Then the next question is how do we engineer them for more sustainable non-polluting energy production?

The *HSC* on this same page goes on to at least imply from the context that Temperature differentials create electric current flows too. They say, "A hot iron at one end of a room and a block of ice at the other end will cause a current to flow both ways until the iron, the ice and the room are all equal in temperature. That will also happen if you put two red hot irons or two blocks of ice at opposite ends of a room. Warm (water rising into cold space creates a flow of current, but that does not mean that there is one kind of "electricity" to make the water rise and another to make it fall. One might as reasonably say that there are two kinds of water, one kind which rises and another which falls". So here they recognize that temperature differentials create electricity. And yes while there are two kinds of water, one, steam, which rises, and another, condensations or rain, which falls, they both do it from the universal engine of male - female interchange which is another name for a vortex whirl phenomena.

Several years ago Walter and Reta Baumgartner in their now defunct newsletter, I believe titled *Energy Unlimited*, described an experimental set-up called the "Water Thread Experiment" which they used to demonstrate that falling water generated electric current enough to light up a bulb without turning a generator as we conventionally do it in hydro electric power. Simply the act of moving, or falling water creates current flow; as we shall see by the interaction of vortex whirls that constitute the basic nature of the ether, One continuous substance, or any movement called by any other name.

If we have two or more whirls that are in stable relative balance with each other over time and there is no *perceptible* interchange between them, then we consider that there is zero electrical potential between them. If we create an imbalance in this stable configuration then on one side we have "negative" electricity ( a negative potential or direction is what is meant ) and on the other side is "positive" electricity or potential and direction.

If we rub two collections of atoms or two whirls or whirl systems together energetically enough, and if the axes of the whirls are not easily changed in orientation ( so that the whirls are good insulators rather than conductors), then an imbalance will accumulate as long as the motion is not balancing or neutralizing which

means so long as one whirl or system is speeded up or slowed down, or realigned in its axis relative to the other whirl. This accumulated imbalance is static electricity such as made when rubbing a glass rod on fur. Taking this view to the limit we can see that any relative motion between any two whirls will create some degree of imbalance but it is only when it is enough to become perceptible as described with the glass rod and fur that we describe it as static electricity.

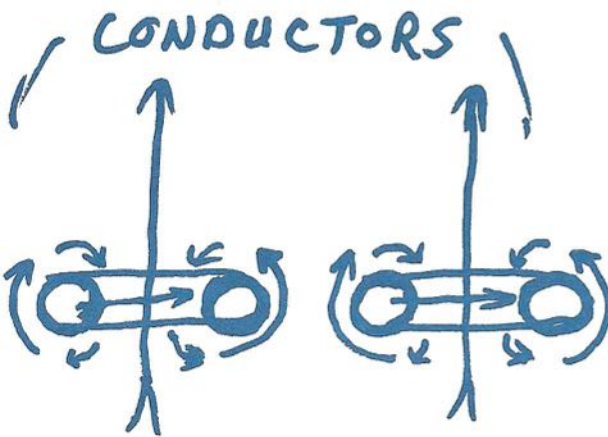
The creation ( by mutual motion of whirls ) of the static electricity occurs as the filaments of the atom-whirls are either speeded up or slowed down and this is a change in energy which change implies the shift of potential or speed of filament motion to other atom-whirls. The changed condition of the atom-whirls' filaments tends to persist in nonconductors and it is non-persistent in conductors as the filamentary motion is conducted elsewhere to other atom-whirls' filaments. In all cases there are no "perfect" conductors or non-conductors and both types occur in varying degrees in all phenomena.

If the charge of electricity is predominately static as the fields do not readily orient themselves, be conductors and move the charge elsewhere or conduct the current, then the change of motion (increase or decrease ) has been taken up by the filaments and the filaments themselves may be considered to be that part of the whirls that exhibits or is dynamic electricity within this static electricity. The dynamic electricity inside the static electricity then is a current that is the *filament motion* inside each whirl-atom, or it is a *part* of the energy of that filament if we apply the usual conventional "zero" energy potential. That current inside the whirl or that created between whirl interactions/interchanges is the filiar component of the whirl or other whirl created by whirl interactions. This is probably what is orthodoxly called "electric force". The other transverse or circumferential component is the orthodox "magnetic" direction and the radial component ( which we will also see is that direction in which light travels ) is the direction of electric pressure ( or attraction to name it from opposite viewpoint ).

The simplest arrangement or model to consider for conductors appears to me to be the placement of two or more sets of whirls as in the diagram following. In figure 2 we are looking at two sets of whirls from a side view with the left hand set arranged so that both whirls are going in the same direction (toward the top of the page) and so their whirls' difference surfaces mesh or engage each others' gears. This is a male - female pairing and is the only way a circuit is established ( although all arrangements are not "perfect" and even a male - male pairing or a female - female pairing or unmeshing unengaging gears do transmit or engage and mesh *some*, just as those engaging also disengage *some* ). So the left hand pair are conductors of electricity and the right hand are not. The right would be more static charges. If the whirl axes are oriented as the set below the two pairs, so that they are at right hand angles they are also

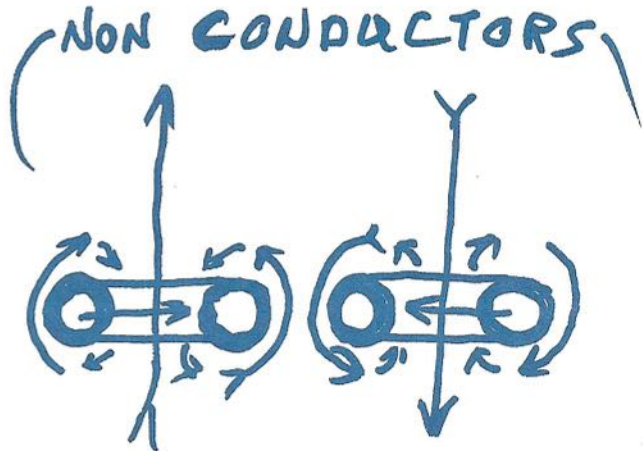
not as good a conductor, though better than the other mismatching of whirl gears. Obviously an infinity of variations can occur from these three basic types giving various degrees of static and dynamic current flows, conductors and non-conductors. Apparently in magnetic elements such as iron their whirl axes are naturally aligned closely enough that an electric current or magnetic field imposed upon them will cause them to orient more fully into a conducting dynamic mode and static electrical generators vice versa.

Aligned Axes same direction



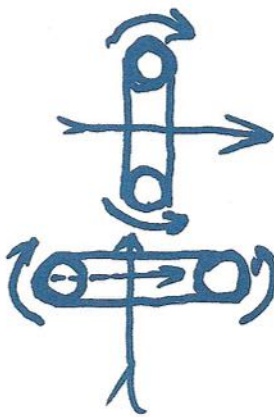
Synchronization  
conducts

Non aligned Axes



Friction  
does not conduct

Figure 2



Non aligned Axes  
Not as good a  
conductor

These directions of motion all tend to close on themselves and thus exhibit more or less perceptible motions. When the current is in all directions more or less balanced and thus is internally approximately balanced and the magnetic component balances itself similarly we have static electricity and the static charge exhibits no *perceptible* magnetism. Internally such a charge does have magnetism. Dynamic electricity does exhibit magnetism and is thus called magnetic. The usually always perceptible unbalanced component of whirl-atom interactions is the pressure or attraction which is the accumulated sum in some direction resulting from whirl-atom interaction such as in moving a conductor through a field or even in rubbing a glass rod on fur. This component corresponds to the direction of propagation of light and thus is directly analogous to light pressure. Thus electrical phenomena can be explained in identical terms to light ( or temperature, etc. ) as we will see with only unessential L & T ( space & time ) differences. That single perceptible component will be very weak compared to the others which become more perceptible in dynamic electricity.

To see clearly how the unbalance makes the charged body move we might consider other facts about the charge. This may enable us to relate E/M and Gravity phenomena more clearly and thus apply it to technology as in A/G flight and other levitation/transportation. On any "charged" body as in a static charge on a finger that can shock another after rubbing feet across a rug, the charged atom-whirls must be in a thin surface layer of the whole of such a charged body. We can understand it by considering that a charge can be generated on a body which is a conductor, provided the body is insulated ( by non-conductors ). If in generating this charge more energy is generated than to just charge the surface atom-whirls ( which on the surface or air side are not so well supported by the less dense and more mobile air atom-whirls ) then the result is called by other names than static electrical charge. There is also some degree of, and it may be a most perceptible degree of, other phenomena such as light, heat, eddy currents, etc. For a body that is not a good conductor the resistance to perceptible charging of surface or of any atom-whirls is greater. But, in any body all the atoms are to some degree modified or charged however perceptible it may be. When I rub my feet across the floor my whole body becomes charged to some degree but most perceptibly the surface skin becomes charged. The point here is that the surface atom-whirls of any body are supported differently by the surrounding non-conductors ( ie: air etc. ) than they are by the inner field interactions of atom-whirls of the same body of their kind. The rubbing that makes imbalance perceptibly accumulates then as a static charge.

Of course these charged atom-whirls are imbalanced with surrounding ones and thus the spirals in their outer field surfaces are in effect screw threads so that the atom-whirls tend to screw themselves along in the direction of least resistance as a means to become more balanced just as the earth is balanced by its revolutions and rotations about the solar system main axis and the sun center. This

same tendency to move is identical to Bernoulli's Principle which we saw in the last issue as a model for gravity mechanics as the varying with pipe diameters gives varying pressures in any pipe with fluid flows. This is really the principle of any machine, any movement, of Life or of life/death. Clearly, if there is any unbalance in any direction of the geometrical surface of the charged body, the charged atom-whirls move in that direction until there is a fair degree of balance. This explains the easy accumulation of charges on points and more rapid discharge from them. Thus rapidly all charged atom-whirls become oriented so that their tendency is to move in the effectual normal or radial direction to the surface zone they are in ( again the path of least resistance, or they seek their like pressure zone ). They tend to spirally move into or away from the body they are on with one direction characterizing a "positive" charge and the other a "negative" charge.

The Russells spoke of all electricity as being positive or charging as both poles *create*. Obviously *nothing* can be created without both male and female poles and in this sense both "charge". But just as obviously then both discharge and the difference appears to be in the degree. And, it appears by contexting it in the *creation* of matter or of anything, that they were emphasizing the coming together aspect of motion and that aspect of Electricity, just as they spoke of gravity as being a push from without to within to form matter ( even though they also said the radiative discharge aspect was also gravity pushing from within to without - push or pull, positive or negative is all point of view ). While wishing to thus rename electrical phenomena as always being "positive" whether or not it moved from a high or low potential it still always moves in both directions simultaneously and how any of us chooses to name it depends on point of view. To be clear we must at least acknowledge that any motion implies both a push and a pull, both positive and negative potentials. To consider as the Russells did that electricity is only charging or "positive" electricity is the same as their considering gravity is only the coming together aspect of Gravity, or only the matter accumulation or gravity with a little "g", while Gravity as a whole process includes gravitation and radiation and Electricity includes electrical current flow and magnetic fields and electric displacement; and all of these - Gravity and Electricity and all phenomena - obviously must always occur all simultaneously in the creation of anything and in any movement. None of these phenomena are separable from any of the others, although some may become virtually imperceptible unless we take painstaking measures to measure small or big enough to perceive them.

The charge is usually distributed over the whole surface of the body unless it is a poor conductor as say the electric pressure is the same all over a metal sphere and similarly on other bodies; the charge balancing itself. But if two bodies with centers A and B, charged with the same "kind" of electricity ( say both + charge, so both predominately male or with strong polar vortex motions), be brought near enough together, the atom-whirls will screw themselves through the air in the same direction with

respect to their respective centers. For example the atoms of A screw themselves towards center of A and of B towards center B. Those directions are opposite to each other; so charges of the same kind or sign repel and of opposite attract. This mutual motion between them is a coming apart one from the other and a coming together of the mass of each body within itself. As charges of opposite sign are *always* created by any mutual motion of separation or centrifugal force dominance between and of two bodies, then obviously the "attraction" of opposite signs or charges is a statement emphasizing affinity that is the reverse in form to inertia. Or the "attraction" of opposite signs is compression, centripetal force dominance and gravity and the "repulsion" of like signs is expansion, centrifugal force dominance and radiation. We can reverse this naming by reversing our point of view. This effect of statically electrically charged bodies to separate is based on the above mechanics.

In the preceding paragraph the actual perceptible motion of the charged bodies themselves is always preceded by the motion of the atoms on their surfaces in the appropriate direction, causing unequal piling up of the charges on those surfaces. This is a reverse way of stating the previously described distribution of charge. This also suggests the principles of "electrical capacity", etc.

The Russells took the point of view that like attracts like or that everything seeks balance in its own pressure and potential zone. So in the case of static charges repelling each other we have two highly polarized potentials (whirls) out of balance with each other that are attempting to get as far away from each other as they can to seek a position of relative balance one to the other.

Another way of looking at this is to consider the two adjacent whirls as being placed as the diagrams in the last issue page 39 figure 1, (SF&O) - ( which is also reproduced as figure 1 in this issue with the electric current parts of the whirl named) so that they function as two sets of gears that either unmesh or mesh and thus either creating friction, heat, and pushing apart or they create synchronization, cooling, and coming together. Or, we could consider the two whirls as placed so that the equatorial discharge of one whirl reverses potential at the field difference surface between the two and synchronizes with the polar generating field of the other. In this case it would appear that the two whirls were attracted to each other as the male and female poles void each others opposition by attracting each other in the union of seeking balance. It would also seem to me that a conductor functions this way or dynamic current flow occurs in this orientation of whirl fields and static electricity and non-conductors function with an opposite orientation. In other words field orientation determines whether or not we observe static or dynamic electricity or a conductor or a non-conductor.

This last few paragraphs reduces the expression of electricity to the basic male female dynamic that is the basis of all phenomena.

This screwing action of the whirls on a charged body has components in three directions/dimensions. Or, expressing the tendency to move apart or together by Bernoulli's theorem, their 'flow' relative to each other must give components of 'pressure' in the two transverse dimensions. In any finite actual science we cannot ignore, separate or reduce the number of dimensions. So we get the following important general conclusions: The "zero" of potential that science talks of ( like absolute zero in temperature or any absolute measure in science) is arbitrary and really abstract or not real world science and engineering - is merely the *average* 'electrification' of our environment - or it is not really zero. *Zero and Infinity* are the limits of numbers or measurement and in our ordinary language are usually One word expressions. We may consider an almost absolute zero of potential as being one which is very near to the body not existing. And as no two finite bodies can be perfectly balanced, it follows that every two bodies have different potentials; thus, with respect to the One or a fully absolute zero potential ( the universal vacuum the Russells spoke of?) every body is of a different potential from every other body, and thus, interacts with (attracts & repels) every other body with a force having three ( space ) components. The component on the "straight" line between the centers of the two or more bodies is orthodox gravity, and the other two are orthodoxly unnamed as far as I know, except implicitly as the "square of the distance" in Newton's law. That separate component cannot exist alone with finite real bodies; always it is inseparably bound up with two other components which in electricity are herein called the current or electric component and the magnetic component: or in light the transverse components; or is combined and called chemical affinity in that scale of consideration. When Einstein talks of light being bent he introduces one of the two transverse components and in the next issue we will see the other component introduced as light is shown to be corkscrewing just as electricity does. So here I surmise that gravity corresponds to the electrical displacement component.

So, if any two bodies get into an equilibrium so steady as to have the two transverse or affinity components very smoothly balanced by the bodies' mutual revolutions, then the longitudinal attraction and repulsion is so smoothly balanced that we say there is no "electrical" attraction, and the comparatively minor attraction or reaction remaining 'externally' perceptible is named *gravity*; and as there is practically no change in it (none was perceptible to Newton ), then gravity is just said to exist (*implying* , when we *have* knowledge that there are two other components, that gravity travels at infinite speed - which consequently drops time out of molar (most of) "science"). These last two paragraphs express the ultimate nature or general mechanics of gravity in all three of its forms : as seen from a One, Many & Relationship point of view.

The verbal trick in getting a consistent expression or mechanics of Gravity is to use finite bodies, three dimensions and not drop time. Newtons' law implies and asserts in so far as it is explicit, two masses at or as geometrical points; and obviously a consistent mechanics of Gravity is forever impossible *for such points*. After we



have the simple trick of three dimensions, all that is needed is to recognize the various conventional names already given to the reactions of the other two components, and to refuse to ever take them as really splittable or dualistically.

If the rubbing of the two whirl-atoms or collections of them be continued, obviously the static charge will accumulate, and there will be a greater and greater tendency for the charged atoms to either 1) move bodily in the appropriate direction (of least resistance or to a wave field corner) or 2) give off secondary whirl-atoms in that direction ( to give off electrons or other particle whirls, which will travel in the "negative" direction and by the third law of motion 'kick' the remaining part of the atom from which each comes, a little distance in the "positive" direction), or 3) change the shape, speed, spirals or "pressure" of their fields in such a way as to restore equilibrium. Those same tendencies obviously existed with the charge; as soon as they somewhat *perceptibly* act, then there is an "electric current" and we have *explicitly* recognized the existence of those fields (as expressly distinct from their filaments or condensations) which previously we neglected; and we have *dynamic electricity*. Clearly there is no sharp or absolute distinction between static and dynamic electricity - merely the quantitative one of when it is that we care to say the field reaction ("magnetism") is *perceptible*. And that was proven many years ago by the "Rowland experiment" which showed that a charge moving fast enough is *perceptibly* a dynamic current- and all charges do move *some*.

In the preceding we saw that a "current" may be motion of nominally three sorts. Those three are ultimately identical:- i.e., a change of shape or spiral of the field will move the atom-whirl somewhat ( and will keep on moving it as an "ion", if it is fairly free to move); and that change of the field may accumulate an unbalance which splits a molecule into parts called *ions* , or splits small secondary whirls off of atoms as electrons, or with *perhaps* more difficulty splits an atom into different "elements" ( This is exactly what the Cincinnati Groups Lent 1 Reactor experiments appear to have done - and what Toby Grotz, Ron Kovac and I have also done in vacuum tubes as has been done at the beginning of the century and likely before - all apparently with little difficulty). Some of that motion and splitting will happen in any current: but probably the *chief part of the current consists of the changed pressure of the fields* which exists throughout the circuit. The same principle of temporary unbalancing of whirls gives unlimited scope for various phenomena of currents. A point to be noted is that consistently described currents do not need to have a flow of any fixed or proportionate number of "electrons" per unit of current ( although taking *electron* in the complete One sense of *any* size of secondary whirl, obviously the current is *all* electrons. Electron flow - of real finite electrons - occurs only if the current is somewhat unsteady at the place where the flow is perceptible. There can be no perfectly steady current; therefore, the *size* of the jerks in the flow, or the jerks or knocks in the vibration or spirality of the fields, determine whether 1) electrons of some size, or 2) ions, or 3) new elements, or 4) new chemical compounds, etc., 'flow' as the current.

The current may be used as Toby Grotz, Ron Kovac and I have done to give or make a three dimensioned spectrum with varying colors representing different elements as well as other particles or secondary whirls. What we need to map out is a "harmonic periodicity" of currents and various other forms of currents not usually recognized as electric currents needed to give the various elements to fully open wide the doors to the age of transmutation.

When the atom-whirls thus form a dynamic current, that collection of atom-whirls which forms the closed circuit of the current is effectually/dynamically a filament of a larger whirl-atom ( and the filiar axis is the *electric* or filiar direction or current direction ), of which the field is the magnetism. And the *magnetic direction* is the direction of the well known "lines of force" that go around that filament, as the field flows around the filament as shown in last issues' article figure 2. And the *direction of (static) electrical pressure or displacement* is the direction of the vector sum of the normals to those magnetic directions - i.e. it is the direction of the main axis of the large whirl of which the current structure is the filament.. Thus, in dynamic electricity, we move ourselves into the atom-whirl so to speak or into this big whirl to describe and understand it. So, the first two directions or components become *perceptible* ( they are strong compared with the static quantities ), and Maxwell's displacement or the static pressure component, which in static electricity is the only perceptible component from our point of view *outside* the whirl circuit, becomes imperceptible in most cases, for precisely the same reasons that the analogous component of motion of the solar system ( its motion more or less in the direction of its main axis NS' ) is practically imperceptible to us. Again, I suspect this displacement or whirl axis direction is conventional gravity. The whole current circuit with its magnetic field, constitutes *one* statically charged whirl. And in this dynamic electricity, *both* the electric direction and the magnetic direction are *perceptibly* closed on themselves. And as some or all of the universe other than that large whirl is effectually a structure that balances with that large whirl, forming a closed "current" with it, the *displacement direction itself becomes a closed line*. This last point reveals that it is impossible to establish any directions in the universe *except* locally and as finite ones that are portions of an ultimately closed line. Thus no principle or nothing essential depends on direction; that is any question of direction is quantitative, local, practical, a matter of arbitrary agreement and therefore *relative* in our ordinary language - instead of space being so, or curved as in Einstein's language/theory. We have also seen how a whirl can 'reverse' by our taking a different point of view. We change the *naming* of directions, and in doing so necessarily imply changes in naming of speed relationships which we ordinarily assert vaguely by the names *static* and *dynamic*. The way to see that it is to take both points of view simultaneously or a universal point of view - perhaps using inductive and deductive reasoning at the same time - and compare them. This is a highly beneficial skill if we can use it in dealing with the people we live with.

Any two atom-whirls (especially of different elements or molecules) to some degree form a closed static circuit. So,

any phenomena which perceptibly disturbs the static electrical balance creates a perceptible dynamic current ( as the water thread experiment by Walter Baumgartner and the hot stove and block of ice example given by the Russells illustrate). This understanding gives the principles of currents that can be generated by heat, light, percussion, etc. Ultimately any motion anywhere causes or is a current - which is part of the thesis of this series of articles. The question facing all of us who are looking for solutions to our present unsustainable and polluting energy production is what motions can give us practical, pollution free and sustainable current.

This pretty well sums up the detail that I wish to give in this issue about EM phenomena and its relation to Gravity and Motion. Next issue we will see the Mechanics of Light and Temperature (Heat) and summarize all the relationships. As a teaser consider the following dimensional equations. The one on Light was suggested to me by Kevin Meehan a mutual friend of David Levick of the last issues pyramid energy article and mine. Kevin suggested ( $g = -l$ ) and therefore ( $l = -g$ ). So I suggest, yes, if Gravity is gravitation x radiation, and If Light is luminosity and darkness, and if gravity is minus light as in a black hole, and radiation is light as in the sun, then light is antigravity as is the sun's coronal discharge just as darkness is gravity as in a black hole. Then perhaps in similar vein if temperature is heat x cool, and so forth then cold is gravity and heat is antigravity. How might we engineer these? We have used the electric current and heat and pressure to transmute elements, how might we use these and even light to levitate? How might we orient whirl fields to cause gravity or radiation (antigravity) using electricity/magnetism? Please note that I am printing several old magazine articles and what I have of the patents of T.T. Brown that illustrate much of the theoretical discussion in this article. The Magic with magnetism illustrates that magnetic fields do act like electric current flows in that they will dissociate water into Hydrogen and Oxygen. T.T. Brown showed us AG propulsion but it evidently flew over most peoples heads?

# Transmutations of Silver to Gold

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1. T. Tiffereau...
2. R.M. Hunter...
3. A.E. Waite...
4. Fulcanelli...
5. Fr. Jollivet-Castelot...
6. Dr. S. Emmens...
7. Allotropic Silver...
8. References

The manufacture of gold from other elements can be achieved by several methods. This review includes electronic treatments of ore such as invented by T. H. Moray. The penultimate means of transmutation is the Philosophers' Stone of any degree, but that is another subject altogether. Most of the experimentors in the 19th and 20th centuries used a variety of "wet" techniques with nitric acid, or "dry" transmutations with catalytic alloys (especially arsenic) in the furnace. Dr. Stephen Emmens added high-pressure hammering (500 tons/sq. in.) of allotropic silver at low temperature, followed by fluxing, granulation, more hammering, treatment with "modified nitric acid", and refining.

## 1. Th. Tiffereau

Between 1854-55, Theodore Tiffereau submitted six memoirs to the French Academie des Sciences concerning transmutations of silver to gold. He published a compilation of the papers ( *Les Metaux sont des Corps Composes* ) in 1855. (1-3)

Tiffereau conducted his experiments at considerable expense while supporting himself making daguerotypes in Mexico. Tiffereau claimed that Mexican silver possesses peculiar qualities which lend to its augmentation as gold (Dr. Emmens also used Mexican silver in his work). While he claimed success in principle, he made no capital gains. Tiffereau demonstrated his process at the French Mint (Paris) before the assayer M. Levot, but the results were unsatisfactory. According to Tiffereau, the reason was that Mexican silver possesses peculiar qualities which lend to its augmentation as gold. It is perhaps significant that Dr. Stephen Emmens also used Mexican silver in his Argentaurum process.

Tiffereau attempted many modifications of his techniques, and claimed that certain experimental conditions influence the transmutation of silver to gold:

- 1) Pure silver filings were used, sometimes mixed with pure copper filings (Ag 9:1 Cu) and traces of zinc, iron, alumina and silica.
- 2) Trace amounts of gold catalyze the reaction.
- 3) The silver was refluxed with concentrated nitric acid, hyponitrous acid, and nitrogen protoxide or deutoxide
- 4) Concentrated sulfuric acid was used at times
- 5) The acids were exposed to sunlight to "solarize" them. Tiffereau complained that the French sun was not so effective as the Mexican.
- 6) Halides and sulfur in the presence of oxides of nitrogen improved the reaction, and so did ozone.
- 7) Prolonged reaction time increased yields.

Tiffereau attributed the production of gold in the earth to the action of the "microbe of gold". This was confirmed in the 1980s by the discovery that placer gold nuggets form around a nucleus of bacillus cereus.

The following experiment is typical of Tiffereau's general methods:

"After having exposed, over two days, pure nitric acid to the action of solar rays, I added pure silver filings with pure copper filings in the proportions of the alloy of money (9:1). A lively reaction manifested, accompanied with a very abundant deposit of intact filings agglomerated in a mass.

"The disengagement of nitrous gas continued without interruption, and I left the liquid as is over twelve days. I noted that the aggregate deposit was augmented sensibly in volume. I then added a little water to the dissolution in which the product had precipitated, and again abandoned the liquid to rest five days. During this time, new vapors unceasingly disengaged.

"The five days having passed, I raised the liquid just to ebullition, which I maintained until the nitrous vapors ceased disengagement, after which I evaporated it to dryness.

"The matter obtained from the dessication is dry, dull, blackish-green; it did not offer an appearance of crystallization...

"Placing the matter again in pure nitric acid and boiling six hours, I saw the matter become clear green without ceasing to aggregate in small masses. I added a new quantity of pure concentrated nitric acid and boiled it anew; it is then that I finally saw the disaggregated matter take the brilliance of natural gold."

Tiffereau's third test in this series "presented an extraordinary phenomenon to be noted: the quantity of the alloy that I used experienced a transformation entirely to pure gold."

Carey Lea suggested that Tiffereau and other experimentors had merely prepared a gold-colored form of allotropic silver.

2. **R. M. Hunter**

In 1908, Sir Henry Baskerville mentioned that "Among the many communications reaching the writer, one is of more than passing interest. Mr. R.M. Hunter, of Philadelphia, has written concerning 'synthetic gold' as follows:

"I have so perfected the process that in my judgment, based on my actual experience, gold may be manufactured at enormous profit, and to this end I have designed a plant to be erected in Philadelphia and am at this moment negotiating for \$500,000 capital for its erection. I realize that the public and most scientific men are adverse to the belief in the possibility of such an enterprise, but I know what I am doing and can afford to allow public sentiment to follow its own course."

"Enclosed with the letter was an affirmative affidavit. On request, Mr. Hunter promptly forwarded me samples of silver in which the gold is 'growing' and some 'grown-up' gold, said to have been produced by his secret process. I have not made analyses of the samples."

Apparently, Mr. Hunter never succeeded with his plans. (4)

3. **A. E. Waite**

The eminent occultist Arthur E. Waite wrote "A Collection of Alchemical Processes" which includes a segment entitled "Silver Transmuted Into Gold By The Action Of Light":

In the focus of a Burning-Glass, 12 inches in diameter, place a glass Flask, 2 inches in diameter, containing Nitric Acid, diluted with its own volume of water.

"Pour into the Nitric Acid, alternately, small quantities of a Solution of Nitrate of Silver and of Muriatic acid, the object being to cause the Chloride of Silver to form a minutely divided state, so as to produce a milky fluid, into the interior of which the brilliant convergent cone may pass, and the currents generated in the Flask by the Heat may so drift all the Chloride through the Light.

The Chloride, if otherwise exposed to the Sun, merely blackens on the surface, the interior parts undergoing no change: This difficulty, therefore, has to be avoided. The Burning-Glass promptly brings on a decomposition of the salt, evolving, on the one hand, Chlorine, and disengaging a metal on the other. Supposing the experiment to last two or three entire hours, the effect will then be equal to a continuous midday sun of some 72 hours. The Metal becomes disengaged very well. But what is it? It cannot be silver, since Nitric acid has no action on it. It burnishes in an Agate Mortar, but its reflection is not like that of silver, for it is yellowish, like that of Gold.

"The Light must therefore have so transmuted the original silver as to enable it to exist in the presence of Nitric Acid." (5)

4. **Fulcanelli**

The renowned incognito adept Fulcanelli published this transmutation of silver in *Les Demeures Philosophales*:

"The simplest alchemic procedure consists in utilizing the effect of violent reactions --- those of acids on the bases --- to provoke in the midst of the effervescence the reunion of pure parts, their new arrangement being irreducible. In this manner, starting from a metal close to gold --- preferably silver --- it is possible to produce a small quantity of the

precious metal. Here is, in this order of research, an elementary operation whose success we guarantee, providing the instructions are carefully followed.

"Empty into a glass retort, tall and tubular, one-third of its capacity in pure nitric acid. Adapt to the receiver an escape tube and arrange the apparatus in a sand bath.

"Gently heat the apparatus short of reaching the boiling point for the acid (83° C.). Turn off the fire, open the tube, and introduce a small portion of virgin silver, or of cupel, free from gold traces. When the emission of peroxide of azote has stopped and when the effervescence has quieted, let drop into the liquor a second portion of pure silver. Repeat introducing metal, with no hurry, until the boiling and issuing of red vapors manifest little energy, which is indicative of the property of saturation. Add nothing more. Let it rest for half an hour, then cautiously decant your clear solution into a beaker while it is still warm. You will find a thin deposit in the form of black sand. Wash this with lukewarm water, and let it fall into a small porcelain capsule. You will recognize by making the assays that the precipitate is insoluble in hydrochloric acid, just as it also is in nitric acid. Aqua regia will dissolve it and yields a magnificent yellow solution, exactly like gold trichloride. Use distilled water to dilute this liquor; precipitate from a zinc blade. An amorphous powder will be obtained, very fine, matte, of reddish brown coloration, identical to that given by natural gold reduced in the same manner. Wash well and dessicate this pulvurent precipitate. By compression on a sheet of glass or marble, it will give you a brilliant, coherent lamina with a beautiful yellow sheen by reflection, green by transparence, having the look and superficial characteristics of the purest gold.

"To increase with a new quantity this miniscule deposit, you may repeat the operation as many times as you please. In this case, take up again the clear solution of silver nitrate diluted from the first washing water; reduce the metal with zinc or copper. Decant this silver into a powder and use it for your second dissolution." (6)

#### 5. F. Jollivet-Castelot

Francois Jollivet-Castelot was the Secretary General (and later President) of the Alchemical Society of France (founded in 1896). He also edited the Society's journal *L'Hyperchemie*, and served as a special delegate of the Supreme Council of martinists. He authored several books and articles on alchemy and "hyperchemy", a system of non-occult chemical methods of transmutation. (1, 2, 4, 18-21) (7-13)

Jollivet-Castelot began experimenting with transmutations of silver in 1908. In 1920, he published *La Fabrication Chimique de L'Or* to report his successes using both "wet" and "dry" methods of transmutation:

"By means of catalytic action I have succeeded in manufacturing gold chemically by acting on silver with arsenic and antimony sulfides, tellurium, and tin.

"This process gives a very high yield which has already been confirmed by several chemists, in particular by Mr. Ballandras, Chemical Engineer of Lyons, and Mr. Outon, Chemical Engineer of Buenos Aires...

"The object of the present leaflet is to enable chemists to repeat and check my experiments in their turn...

"I made a mixture composed of 3 gr. of chemically pure silver and 1 gr. of chemically pure orpiment and placed it in 36° nitric acid for several months cold and then brought it to ebullition. The liquid was kept at the boiling point for several days. A small quantity of the material became detached at this moment and formed a pulvurent black

deposit. When no further action took place, I decanted off the solution and collected the insoluble residue. This residue was attacked by aqua regia at the boiling point until it was almost completely dissolved; the liquor when decanted and filtered was analyzed and gave all the characteristic reactions for gold.... [December 1925]

"I acted on 22 gr. of chemically pure silver ... and on 3.5 gr. of chemically pure orpiment... The mixture was heated to about 1600° C. In a metal smelting furnace for about three quarters of an hour. The residue obtained was again melted with the addition of orpiment. After having hammered for half an hour and remelted with the addition of small quantities of orpiment every ten minutes, it was withdrawn.

"After cooling and the addition of chemically pure antimony sulfide, it was again put back into the furnace, small quantities of orpiment being thrown in every five minutes. The residue obtained had a dark metallic tint. After hammering it became slightly golden.

"The residue dissolved in chemically pure 36° nitric acid first cold and then hot, gave an abundant pulverent deposit. This deposit after being washed and treated with ammonia to dissolve the arsenic and antimony salts was completely dissolved in aqua regia. The liquor then being chlorinated and filtered was subjected to the reagents of platinum and gold. Mr. Andre Vandenberghe who was acting as preparator for this experiment, had thought that in accordance with the law of the evolution of matter, the transmutation of bodies into gold should be preceded or accompanied by their transmutation into platinum...

"The reactions of gold were quite characteristic; the reactions of platinum also seemed to reveal its presence.

"The quantity of gold obtained in this experiment was about one gramme.

"I submit the hypothesis that the arsenic acts as a catalyst and the sulfur as a ferment in this transmutation." (December 1925; Douai, France)

All forms of Arsenic, including Orpiment (As disulfide), are extremely toxic. This effect has served well to preserve the secrets of Alchemy, simply by killing careless persons. Study the subject thoroughly before proceeding to the praxis.

"As a sequel to my previous work on the artificial synthesis of gold, I have introduced tin into these new tests as it is also often associated with gold in Nature. The following is a description of this new process, thanks to which the percentage of gold obtained destroys all the objections that are raised with regard to impurities.

"I made an intimate mixture of 6 gr of chemically pure silver... 2 gr of antimony sulfide, 1 gr of orpiment, and one gr of tin... I then added the usual fluxes and then heated the whole in a crucible in the furnace to about 1100° C. For about one hour, twice adding a small quantity of SbS.

"The residue obtained was treated for a long time in 36° nitric acid, first cold and then at the boiling point; the insoluble residue was next washed with distilled water, treated with ammonia, washed again and finally treated for a long time with boiling aqua regia.

"The liquor when filtered and subjected to the reagents of gold showed the presence of this metal in the form of abundant deposits which may be estimated at 0.05 gr in all, which is very high considering the 6 gr of silver employed. The deposits when collected and dried had a yellow green metallic color and possessed all the characteristics of gold [Analytic tests confirmed the results]...

"The addition of tin to the other bodies has certainly facilitated the reactions of the gold and increased the yield of this metal which can be manufactured artificially by my process, i.e., by synthesis and in measurable quantities.

"It would be very easy to show that, given the respective prices of gold and of the other substances that are used in my process to produce it, a profit could be obtained if the process were worked industrially, all the more so as the greater part of the silver employed can be recovered at each test..

"I believe I now hold the key to the regular and even industrial manufacture of gold.

"But the industrial question is voluntarily put aside from my thoughts, for my only object is the search for pure scientific truth."

In a correspondence to Jollivet-Castelot, Mr. Ballandras reported on "How I Succeeded In Making Gold According To The Process of Mr. Jollivet-Castelot: Dosage of gold obtained by the second method —

"From a mixture of 10 gr silver, 3 gr of tin, 3 gr of arsenic sulfide, and 3 gr of antimony sulfide, the residue which had been obtained was crushed as much as possible and subjected to a treatment of pure chloric acid like in the first method. However, in order to completely eliminate the silver and the tin employed, I scrupled to begin again the indicated treatments, that is as much to say that the powder which was obtained having been subdued first to the action of azotic acid, then washed with distilled water, then subdued to the action of chloric acid, then washed with distilled water, then once more washed with distilled water, and these different operations were begun once again with another portion of pure chloric acid... The insoluble residue was subdued to the prolonged action of aqua regia...

"It must be noted that this thing happened during the ebullition. The washed residue contained the slighter part of gold; this thing would be found dissolved in the last liquor which I obtained.

After 18 hours of digestion at about 25°, I subdued the mixture to ebullition during 3 hours. After reffridgeration, I filtered on glass wool and I looked if parts were not drawn along in suspense. I found nothing. Then, I decided to proceed to a circumstantial analysis of the liquor which I obtained...

"The quantity of gold which was obtained was 0.476 gr for 10 gr of silver employed, or 0.0476 gr of gold per gram of silver."

Jollivet-Castelot read this memorandum to the Academie Royal des Sciences (Belgium) on June 6, 1926:

"A Recent Experiment In Transmutation — All my research work on transmutation since 1908 has started from the fact that gold is found in nature associated with antimony and arsenic sulfides as well as with tellurium, which is considered as a mineralizer of gold. I therefore considered that it was logical to introduce tellurium into the artificial combination of silver and arsenic and antimony sulfides that I make...

"I prepared a mixture composed of 6 gr of silver, 1 gr of native orpiment free of gold, 1 gr of antimony sulfide and 2 gr of tellurium... I added pure silica to the usual fluxes. This mixture was heated in the furnace in the usual way for one hour at about 1100° C. The residue obtained was of a blackish-grey color with violet reflections. It weighed 6.42 grams.

"When subjected to the action of nitric acid, the residue was attacked with difficulty and greenish metallic particles becamse detached. The solution was then decanted and a greenish-yellow residue remained which was kept at the boiling point of nitric acid for several hours. After decanting off the liquor once again, the residue, which had not



changed, was washed, treated with ammonia and then subjected to the action of boiling aqua regia in which it was entirely dissolved after boiling for several hours."

The solution was chlorinated and subjected to the reagents of gold with positive results, although "A certain amount of gold was certainly lost in this test just as in all my previous tests, for it is known that arsenic, antimony, and tellurium entrain gold in their fusion and their volatilization.

"In order to obviate this disadvantage, I had thought of making the vapors of arsenic acid and antimony sulfides and of tellurium act on the silver in fusion in a closed vessel by means of a special device...

"I consider it certain that if the vapors were allowed to bubble through the melted silver, a much higher yield of gold would be obtained than that I have obtained hitherto by an imperfect and too rapid contact of the bodies in presence, while it is undoubtedly necessary to make them react on one another in the vapor state in a closed vessel."

Mr. Louis Outon, a pharmaceutical chemist in Buenos Aires, reported thus to Jollivet-Castelot in a letter (July 26, 1927):

"Dear Sir... I have repeated the experiments... in my laboratory and am amazed at the results. For the moment, it is only the scientific side which interests me, since the cost of the gold obtained is often greater than the value of the metal..."

Mr. A. Ballandras also replicated the experiments and reported the results

"I will not conceal the fact that I have often heard ironical remarks about Jollivet-Castelot's processes by which he succeeded in manufacturing gold. I determined to check his tests with the greatest possible accuracy...

"In a new quartz crucible, I placed 15 gr silver, 6 gr arsenic sulfide, 6 gr antimony sulfide. The crucible was heated at a temperature of 500° C. And then for one hour and a half at 1100° C.. At this moment the mass was fairly liquid... The crucible was then allowed to cool down. The reddish-brown residue obtained weighed exactly 23.742 gr, or a loss of 3.258 grams.

"I allowed this residue to cool in pure nitric acid in which the greater part was dissolved fairly easily. After prolonged boiling the liquor was filtered on a new glass wool. The resultant liquor was very clear and absolutely free of any particles.

"The glass wool was then macerated in aqua regia rich in hydrochloric; after 18 hours maceration, the whole was boiled for 3 hours. I again filtered on glass wool in order to separate any traces of the filter from the liquor... Any gold that might have been obtained would necessarily be found in the last liquor... It was of importance to prove its existence qualitatively at least.

"For this purpose, I tried the various standard reagents, the results being the following: 1) Oxalic acid: flakey precipitate; 2) Iron sulfate: glossy metallic black; 3) Tin chloride: peach pink precipitate; 4) Formol: rather light bluish coloration; 5) Sodium carbonate, potassium carbonate: light coloration after boiling; 6) Sodium hydroxide, potassium hydroxide: yellowish coloration, cloudy.

"These reactions are sufficiently characteristic and clearly prove the existence in the last liquor of a metal which, even if it is not gold, must nevertheless be placed very close to the latter... the metal obtained and gold must be perfectly isotopic.

"I have repeated this test several times and I have observed: 1) That the production of gold is a function of the rapidity with which the necessary heat is obtained; 2) That it is also a function of the degree of tightness of the crucible. A crucible that is closed as tightly

as possible gives better results; 3) That the amount of gold obtained was not always uniform; some of the tests were absolutely sterile and I inferred that this was due to some defect in the mounting.

"I think there must be a certain temperature that should not be exceeded and that the external conditions of pressure and electricity must be of considerable importance."

In another experiment, Ballandras used 10 gr silver, 3 gr tin, 3 gr orpiment, and 3 gr antimony sulfide: "After having operated as previously, I obtained a quantity of gold corresponding to 0.05 gr per gram of silver employed... This I consider to be a highly interesting result."

#### 6. Dr. S. Emmens

Early in 1897, the British chemist Stephen H. Emmens, then residing in New York, announced the discovery of a new element which fills the "vacant space existing in the sub-group of Group I," and which he thought to be the intermediate matter from which silver and gold are formed. According to Dr. Emmens, "Our claim is that the element in question is therefore neither silver nor gold, but which may, by our new physical methods, be converted into gold." (14)

In 1897, Dr. Emmens' Argentaurem Laboratory on Staten Island produced over 660 ounces of gold from silver and sold it to the U.S. Assay Office. He revealed a few historical and technical details of his transmutation process in his book, *Argentaurem Papers #1: Some Remarks Concerning Gravitation*:

"Our work, which converts silver into gold, had its origin in the course of certain investigations which I undertook for the purpose of preparing chemically pure nickel... in 1892. In attempting to prepare these pure metals [nickel and iron], a certain product was obtained which seemed to differ from anything recorded in the textbooks. The same product was subsequently found when the investigation was extended to the case of metallic cobalt... The phenomena observed afforded indications of the existence of some substance common to the whole of the elements in what is known as Series 4 of Group 8 of the classification of Chemical Elements... It appeared to us almost self-evident that if we were right in supposing a common substance to be present in any single series of elements, the same would hold good for each group.

"And as Group I of the classification contains the precious metals — gold and silver --- it was obvious that our time and attention should be directed to these metals rather than to any other....

"Our starting point, so far as silver and gold were concerned, was afforded by the remarkable discoveries of Mr. Carey Lea with regard to [colloidal allotropic silver]... It was found that... this subdivision of metallic silver was attended by very considerable changes in the physical properties of the substance... By certain physical methods and by the aid of a certain apparatus, we succeeded in bringing about a further subdivision of the silver. We were not surprised to find that the substance obtained differed so far from ordinary silver that it could no longer be regarded as the same elementary substance. It seemed to require a new name and a new chemical symbol. Inasmuch, therefore, as our theory was that this substance was common to both gold and silver, and in reality was the raw material out of which both gold and silver were constructed by the hand of nature, we named the substance Argentaurem...

"The next step was to ascertain whether this substance could be so treated as to be grouped into molecules of greater density than those of silver... We found that... Argentaurum can be aggregated into molecules having a density considerably superior to that of ordinary gold molecules. Whether we are right as to this or not, the condensed Argentaurum presents the appearance and is endowed with the properties of ordinary metallic gold...

"We do not consume any chemicals and other costly materials in our process; what we use is mainly energy in some of its various forms, such as heat, electricity, magnetism, gravity, cohesion, chemical affinity, x-rays and the like... Our chief source of expense is the time required for bringing about the desired molecular changes... One ounce of silver will produce three-quarters of an ounce of gold... (14)

Herbert Fyfe reported that Dr. Emmens' process comprised five stages: 1) mechanical treatment; 2) fluxing and granulation; 3) mechanical treatment; 4) treatment with a "modified nitric acid", and 5) refining. Dr. Emmens said, "I regard the mechanical treatment as the *causa causans*. The fluxing and granulation serve, I think, merely to render the molecular aggregate susceptible of displacement and rearrangement." (15)

The mechanical treatment was accomplished by means of Dr. Emmens' "Force Engine", which exerted pressures in excess of 500 tons/sq. in. at very low temperatures. Step 4, using "modified nitric acid", contradicts the statement made elsewhere, that "we do not consume any chemicals... in our process." (16-25)

In a letter (21 May 1897) to Sir William Crookes, Dr. Emmens included a sample of Argentaurum and these instructions:

"Take a Mexican dollar and dispose it in an apparatus which will prevent expansion or flow. Then subject it to heavy, rapid, and continuous beating under conditions of cold such as to prevent even a temporary rise of temperature when the blows are struck. Test the material from hour to hour, and at length you will find more than the trace (less than one part in 10,000) of gold which the dollar originally contained."

Sir Crookes was unable to replicate the experiment to his satisfaction. He reported that "A specimen of Argentaurum sent me by Dr. Emmens has been examined with the spectrograph. It consists of gold with a fair proportion of silver and a little copper. No lines belonging to any other known elements, and no unknown lines, were detected." This analysis resembles that of ordinary bullion gold, which contains silver and copper to make it harder and more fusible than pure gold.

In a rejoinder, Dr. Emmens noted, "I have received a letter from a very eminent Fellow of the Royal Society informing me that he has performed the crucial experiment suggested in my letter of May 21, 1897, to Sir William Crookes. The gold contained in the Mexican dollar after 40 hours of intense cold and continuous hammering was found to be 20.9% more than the quantity of gold contained in the same dollar before the test."

In 1898, Emmens floated the Argentaurum Company, a syndicate which promised that for one ounce of silver (then worth about 50 cents) entrusted with payment of \$4.50 per ounce for conversion costs, the investor would be repaid with 3/5 ounce of gold (then worth about \$11). But Dr. Emmens' application for a patent on his process was refused, so production never began, since he would not have been able to protect his methods from unscrupulous competitors. (26-28)

Dr. Emmens was issued several U.S. Patents for inventions; at least two of them may be related to his process: USP # 501,996 (July 25, 1893), Electrolytic bath; USP #

501,997 (July 25, 1893), Apparatus for Electrolytic Extraction of Metals. Dr. Emmens' Force Engine produced hammering pressures in excess of 500 tons/ sq. in. at very low temperatures. These effects can be achieved by a variety of modern methods.

Semantic ambiguities in Dr. Emmens' writings confuse the understanding of the process. At times, Argentaurum refers to a new element, or to the gold produced from it, or to Lea's intermediate allotropic silver.

## 7. Allotropic Silver

In 1889, Carey Lea discovered the preparation of allotropic silver while he was studying reductions of silver nitrate. He found that silver occurs in allotropic, intermediate, and ordinary forms. Ordinary silver is protean in nature. The aqueous solutions are colloidal, but not polymeric, and give perfectly clear solutions. The several forms of allotropic silver (a-Ag) dry with their particles in optical contact with each other, thus forming continuous films which are beautifully colored, perfect mirrors. Strong acids and pressure will convert a-Ag to the normal form. There are three forms of a-Ag, and all are unstable. (29, 30)

There is also a very stable "intermediate form" of silver (i-Ag) which is easy to prepare. It occurs as bright gold-yellow or green crystals with a metallic luster. Treatment with a very dilute solution of ferric chloride will enhance the appearance of its foliar structure, interpenetrating with plant-like ramifications, or sheafs of fine acicular crystals up to 1 inch long.

Intermediate silver is hard, tough, and unaffected by pressure. It is nearly as indifferent to oxidizing and chlorizing agents as is normal silver. Intermediate silver can be formed from the allotropic varieties by light, heat, or chemical action. The simplest preparation is as follows:

"It has long been known that golden-yellow specks would occasionally show themselves in silver solutions, but could not be obtained at will and the quantity thus appearing was infinitesimal. Probably this phenomenon has often led to a supposition that silver might be transmuted into gold. This yellow product, however, is only an allotropic form of silver, but it has all the color and brilliancy of gold, a fact which was apparent even in the minute specks hitherto obtained...

"It is a little curious that its permanency seems to depend entirely on details in the mode of preparation. I have found many ways of obtaining it, but in a few months the specimens preserved changed spontaneously, to normal silver... The normal silver produced in this way is exquisitely beautiful. It has a pure and perfect white color like the finest frosted jewelers' silver, almost in fact exceeding the jeweler's best products. I found, however, one process by which a quite permanent result could be obtained... the following proportions give good results:

"Two mixtures are required: No. 1 containing 200 cc of a 10% solution of silver nitrate, 200 cc of 20% solution of Rochelle Salt [Sodium potassium tartrate] and 800 cc of distilled water. No. 2, containing 107 cc of a 30% solution of ferrous sulfate, 200 cc of a 20% solution of Rochelle salt and 800 cc of distilled water. The second solution (which must be mixed immediately before using only) is poured into the first with constant stirring. A powder, at first glittering red, then changing back to black, falls, which on the filter has a beautiful bronze appearance. After washing it should be removed whilst in a paste

condition and spread over watch glasses or flat basins and allowed to dry spontaneously. It will be seen that this is a reduction of silver nitrate by ferrous sulfate...

"Although the gold-colored silver (into which the nitrate used is wholly converted) is very permanent when dry, it is less so when wet. In washing, the filter must be kept always full of water; this is essential. It dries into lumps exactly resembling highly polished gold...

"If we coat a chemically clean glass plate with a film of gold-colored allotropic silver, let it dry, first in the air, then for an hour or two in a stove at 100°C., and then heat the middle of the plate carefully over a spirit lamp, we shall obtain with sufficient heat a circle of whitish gray with a bright, lustrous golden ring round it, somewhat lighter and brighter than the portion of the plate that has not been changed by heat. This ring consists of what I propose to call the 'intermediate form'...

"With sulfuric acid diluted with four times its bulk of water and allowed to cool, an immersion of one or two seconds converts a film on glass or on pure paper wholly to the intermediate form...

"Its properties are better seen by using a film formed on pure paper, one end of which is heated over a spirit lamp to a temperature just below that at which paper scorches. The change is sudden and passes over the heated portion of the surface like a flash.

Examining the changed part, we find:

1st. That it has changed from a deep gold to a bright yellow gold color.

2d. When subjected to a shearing stress *it does not whiten or change color in the slightest degree.*

3d. It is much harder, as is readily perceived in burnishing it.

4th. It no longer shows the color reaction with potassium ferricyanide and ferric chloride, changing only by a slight deepening of color.

"Of these characteristic changes the second is the most remarkable. The gold-colored silver in its original condition changes with singular facility to white silver; almost any touch, any friction, effects the conversion...

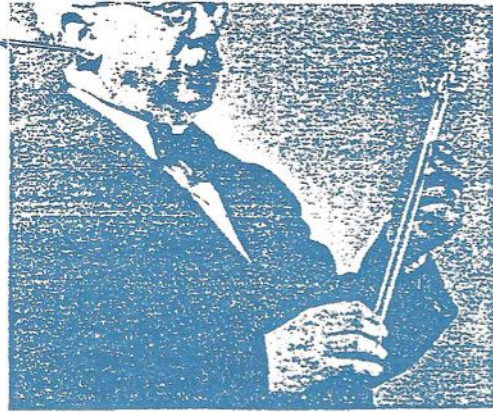
"The intermediate form is distinguished from normal silver almost solely by its bright yellow color and its higher luster."

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Prof. Felix Ehrenhaft displays a tube of gases produced, he says, by decomposing water with a magnet

## Magic with MAGNETISM

If this experimenter is right, his discovery will upset all our accepted ideas on this familiar force.

By ALDEN P. ARMAGNAC

CAN a magnet take water to pieces? No, say physics textbooks. Yes, says Prof. Felix Ehrenhaft, former director of the Physical Institute at the University of Vienna, who now carries on his research in New York. If he should turn out to be right, his findings in the realm of magnetism promise practical applications as far-reaching as the dynamos, motors, transformers, telephones, and radio that have stemmed from Faraday's fundamental research in electricity.

For his "impossible" experiment, Dr. Ehrenhaft employs the simplest of apparatus. Two shiny rods of pure Swedish iron, sealed in holes through opposite sides of a U-shaped tube, resemble a setup familiar to high-school students for breaking up water into hydrogen and oxygen gases by passing electricity through it. And that is exactly what would happen if Dr. Ehrenhaft

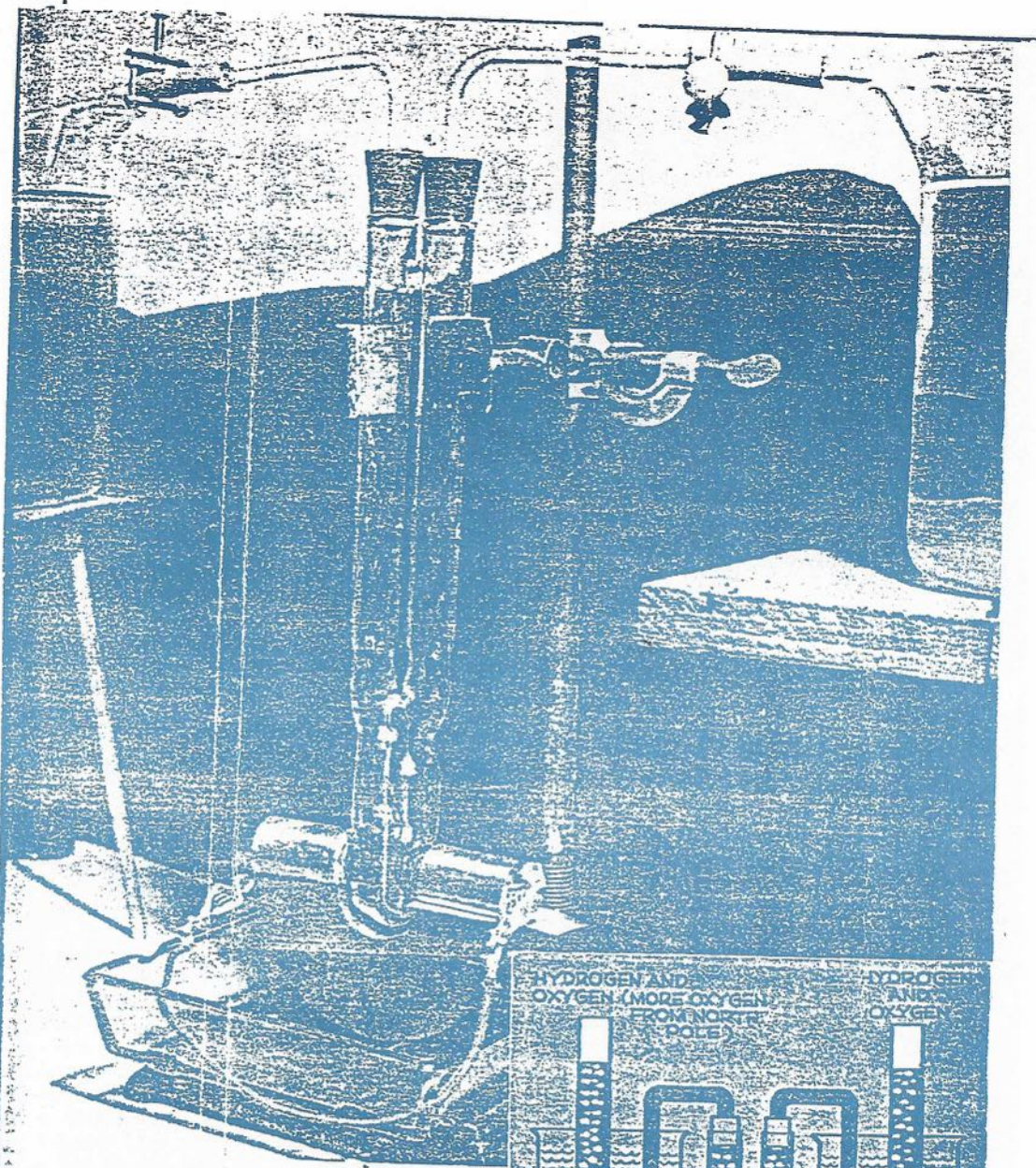
attached electric wires from a battery to the rods. But he does no such thing.

Instead, he uses the iron rods as pole pieces, or "north" and "south" ends, of a magnet—either an electromagnet or a permanent magnet. Bubbles of gas rise through the twin columns of acidulated water, to be collected and analyzed. As might be expected, nearly all of the gas is hydrogen, liberated by a commonplace chemical interaction between the iron rods and the dilute sulphuric acid, one percent by volume, in the water. But the phenomenal part of the experiment is that oxygen also turns up, Dr. Ehrenhaft recently told the American Physical Society. To be specific, it is found in clearly measurable proportions ranging from two to 12 percent of the total volume of gases. When the gases obtained with a permanent magnet are separated, the larger proportion of oxygen is found above the north pole of the magnet. After rigorous precautions that seem to rule out all other explanations—including short-circuiting the magnet poles with wire, so that the poles will be at the same electric potential—Dr. Ehrenhaft concludes that there is only one place the oxygen can possibly come from. And that is from water decomposed with a magnet! Without a magnet, pure hydrogen is evolved.

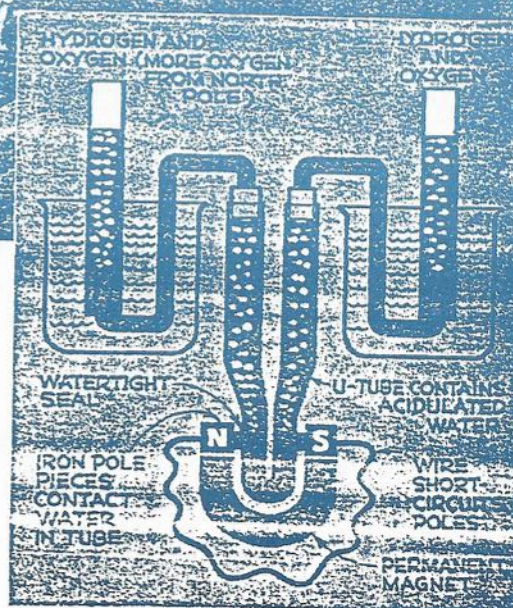
There is an interesting sidelight to this experiment. A strong permanent magnet of the Alnico type suffers a marked loss of strength—say, 10 percent in 24 hours—after being used to decompose water, Dr. Ehrenhaft observes. In fact, makers of the magnets, which are supposed to last for years without material change, have viewed what happens to them with astonishment and dismay. But no fault lies with their products. Energy from an electric battery is used up in decomposing water, and it would be only reasonable to expect energy stored up in a permanent magnet to be drained likewise.

What gives the utmost significance to the reported feat of breaking up water with a magnet is the fresh evidence it offers for the existence of "magnetic current," or a flow of magnetically charged particles, which has been suspected by noted pioneers and which Dr. Ehrenhaft now maintains he has proved. Confirmation of this amazing discovery would point to a possible future rival of electric current, perhaps capable of being harnessed in undreamed-of ways.

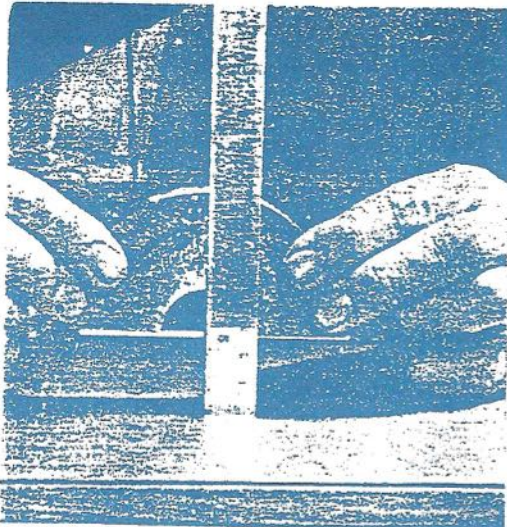
Needless to say, the scientific world will require a whole lot of convincing, since Dr. Ehrenhaft's conclusions flatly contradict long-established beliefs. As every schoolboy is taught, a magnet has a north pole and a south pole. Break it in two with a hammer, and each piece will have a north



**MAGNETIC DECOMPOSITION OF WATER?**  
 Using this simple apparatus, Dr. Ehrenhaft reports, he performs the "impossible" experiment of taking water to pieces with a permanent magnet. This magnet, of horseshoe shape, is seen at the bottom of the tube. Bubbles of gas rise from the metal poles sealed in the tube and are led to water-filled beakers, where they are collected for analysis. Both hydrogen and oxygen are found to be present, most of the oxygen coming from above the north pole of the magnet. A length of wire short-circuits the ends of the magnet to rule out any difference of electrical potential. The drawing at the right shows the details of the setup for this startling test

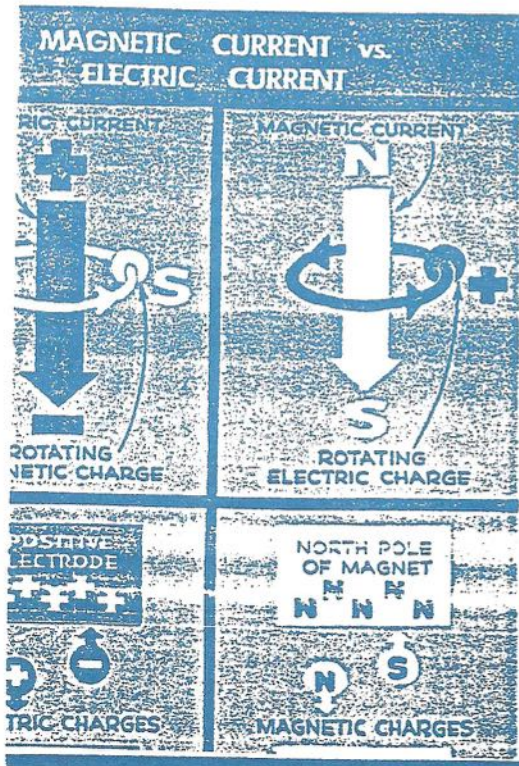






Amateurs can test the strength of a magnet by measuring the distance it makes a strip of iron jump

pole and south pole of its own. No law forbids you to imagine a magnet with only one pole, and the idea comes in handy in certain electrical and radio calculations. But as for actual fact, you cannot have one pole without the other, an experimenter named Peter Peregrinus believed; he demonstrated it to his satisfaction, using a loadstone, in



the year 1269, and prevailing opinion has backed him up ever since. (As we know now, the loadstone that he floated on a platform in water simply turned until its north pole faced the south magnetic pole of the earth, and vice versa. It showed no observable excess of north or of south magnetism—and hence the conclusion that the two were always equal.)

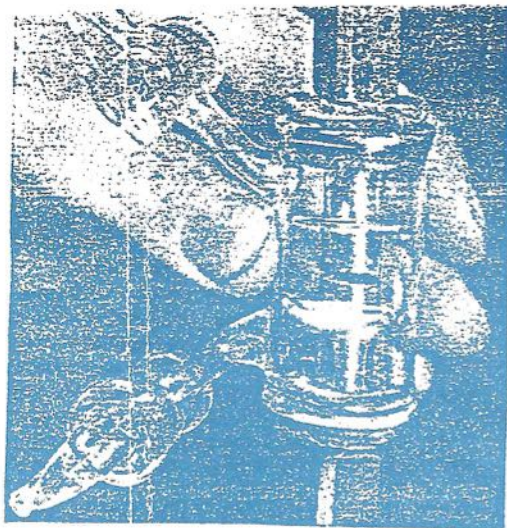
But would the dictum of "no separate magnetic poles" still hold true in a far more delicate test—say, if you substituted microscopic particles of iron or other magnetic metals, as tiny as particles of smoke, for the massive chunk of rock that Peregrinus used? Dr. Ehrenhaft has tried it. In an air gap between the north and south poles of a magnet, he sets up what he calls a homogenous magnetic field, that is, with the lines of magnetic force absolutely parallel. In this field, he finds, the metal particles move toward the north or south pole, reversing their direction according to the direction of the magnetic field. On the particles, he concludes, there must be an excess of north or south magnetic charge. Expanding the terminology of Faraday, he calls the particles magnetic ions. They are the single magnetic poles shown at the lower right of the colored drawing. Instead of bearing plus or minus electric charges, as familiar ions do, they carry north or south magnetic charges.

Now, just as traveling electric ions form an electric current, why shouldn't traveling magnetic ions form a magnetic current? See for yourself another of Dr. Ehrenhaft's startling experiments, and draw your own conclusions.

This time the heart of the apparatus will be a small glass cell, fitted as before with pole pieces of pure iron that dip into water containing one percent of sulphuric acid. An electromagnet, turned on or off at will, energizes the poles. From a projector, a powerful beam of light converges upon the narrow gap between the pole pieces, and a low-power microscope, mounted horizontally, reveals what happens there. Adding a camera provides a permanent record.

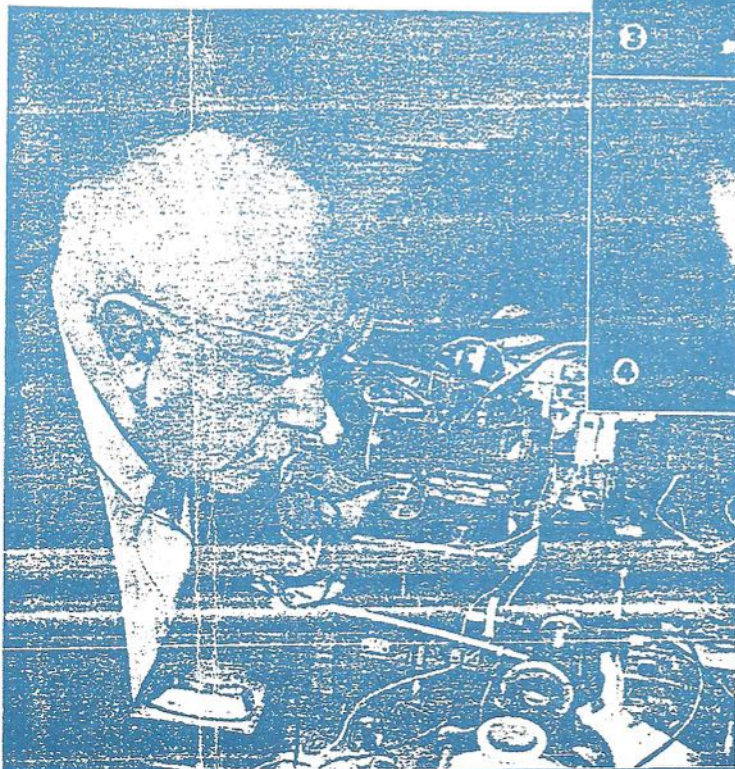
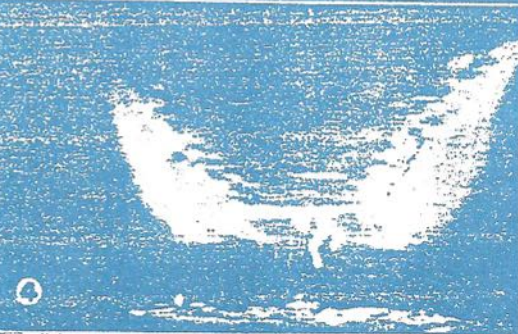
You begin with the magnet turned off. Looking into the eyepiece of the microscope, you see streams of bubbles rising from both pole pieces. They are of hydrogen gas, liberated by the same chemical action as in the first experiment.

Throw the switch that turns on the magnet, and the scene abruptly changes. Stopped dead in their tracks, some of the bubbles cling to the pole pieces. Others leave one pole and travel to the other. Dr. Ehrenhaft calls special attention to bubbles moving downward against their own buoyancy, impelled (Continued on page 222)



A glass cell, heart of the apparatus below, contains poles of an electromagnet, acidulated water

These photomicrographs, made by Alvin P. Freeman, show what happens in the cell. 1. With the magnet off, hydrogen bubbles liberated by chemical action rise from the pole pieces. 2. When the magnet is turned on, the poles attract or exchange bubbles. (Note the large bubble defying buoyancy to move downward from upper pole.) 3, 4. A whirligig of bubbles appears as a large white blur. Bubble tracks between the magnet poles suggest magnetic current. A conical upper pole aids in photography



Through a low-power microscope, mounted horizontally, Dr. Ehrenhaft observes the goings-on in the glass cell. What he sees, photographed above, convinces him that he is watching hitherto unknown forces at play. A powerful beam of light from a projector is focused on the narrow gap between the pole pieces of the electromagnet to make the odd bubble dance visible

## Ingenuity Is Their Name

(Continued from page 218)

thing that looked like a mechanized kiddie-car. The soldiers, in order to have something to carry them across the wide expanses of the big field, had taken airplane tail wheels and mounted them on a small wooden chassis which was only about four inches from the ground. At the rear was a small motor which turned a sawed-off airplane propeller.

This gave enough power to send the thing scooting along at a surprising rate of speed. The two soldiers sat on the board in front of the little engine, like boys on a sled. I can't give any more details of this startling machine because it disappeared in a cloud of dust before I could get more than a quick look at it.

It was obvious, though, that here were two American soldiers who had solved their transportation problem out of scraps.

## Magic with Magnetism

(Continued from page 132)

by some unseen force stronger than gravity.

Meanwhile a spectacular phenomenon has been developing—a miniature merry-go-round of gas bubbles between the faces of the poles and parallel to them. Incapable of being shown adequately in a time exposure, the effect nevertheless appears plainly as a white blur, when the upper magnetic pole is given a conical shape for photographic purposes. Visual observation shows striking details. If copper particles, say, have been added to the acidulated water, they will rotate in the same plane as the hydrogen bubbles, but in the opposite direction. For both, the speed of the whirligig depends upon the strength of the magnetic field. Reverse the polarity of the magnet, and each set of particles spins in the opposite direction.

Here are no wild-eyed theories, but perfectly demonstrable facts. Any skeptical physicist has a standing invitation to see them with his own eyes at Dr. Ehrenhaft's laboratory, placed at his disposal in the New York City quarters of the famous Carl Zeiss optical firm. How to account for the phenomena remains a challenge to science, unless Dr. Ehrenhaft's conclusions are to be accepted. See how neatly they would draw an analogy between well-known electric effects and new-found magnetic effects:

Bubbles or particles that travel between pole pieces of a magnet behave just as if

(Continued on page 226)

amps regularly.

POPULAR SCIENCE

## Magic with Magnetism

(Continued from page 222)

they were magnetic ions, or clusters of them—repelled by like magnetic poles, and attracted by oppositely magnetized poles. This corresponds exactly with the way that "electric" or ordinary ions interact with positive and negative electrodes. And as for the ring-around-a-rosy behavior of the hydrogen bubbles and copper particles, Dr. Ehrenhaft concludes that these are electrically charged particles—ordinary ions—rotating about a magnetic current. This would be an exact counterpart of the classical conception that magnetism rotates about a current-carrying electric conductor.

Now the staggering implications of Dr. Ehrenhaft's observations begin to unfold. Existence of such a thing as magnetic current, once established, would pave the way for industries as gigantic as those that the discovery of electricity led to in its time. A "gold rush" for practical applications might be expected. Patents for them would command fabulous sums, since inventions employing magnetic current would be basic.

What form they may take, no man can foresee, and Dr. Ehrenhaft cautiously declines to hazard a guess. Yet a visitor to his laboratory cannot resist the temptation to let his imagination run free. New kinds of motors and generators? Better ways to transmit power? Transformers that will work on direct current instead of alternating current? Atom smashers? Radical methods of seeing things in the dark, and through microscopes and telescopes? Ways to tap power from the magnetism of the earth itself? And, in your home, substitution of magnetic current—who ever got a shock from it?—for electric current? Pure dreams, all of them, today—but some of them, perhaps, realities of 2044.

Before magnetic currents could be put in harness, of course, a myriad of questions about their behavior remain to be studied and answered. So far, no one knows whether they can be led through wires, like electric currents, as well as through conducting liquids. If so, the wires might be of entirely different materials than the best conductors for electricity. Likewise, the most effective insulators for magnetic current might be substances totally unlike those used for electrical insulators. The whole subject offers as vast a field for pioneering research as electricity did a century ago. And now, as then, an amateur experimenter pattering in his basement stands as good a chance of making an epochal discovery as does a distinguished scientist in a great laboratory.

amps regularly.

POPULAR SCIENCE

This article was first published 20 years ago in *Interavia Magazine*; Vol. XI, No. 5.

The information it contains indicates that successful research was being conducted by T. Townsend Brown on electrogravitic propulsion for planetary and space travel.

Where are the fruits of this advanced research? Why has electrogravitics—a harmonious way of working with natural laws—been ignored for the stupidity of brute force? Where are our so-called leaders in government, science and industry? How long are we to continue selling our cosmic birthright for a monetary mess of pottage?  
—Rev. Henry J. Nagorka, Publisher.

## Towards Flight without Stress or Strain...

BY INTEL, WASHINGTON, D.C.

*The following article is by an American journalist who has long taken a keen interest in questions of theoretical physics and has been recommended to the Editors as having close connections with scientific circles in the United States. The subject is one of immediate interest, and Interavia would welcome further comment from initiated sources.*

— Editors.

Washington, D. C. — March 23, 1956 : Electro-gravitics research, seeking the source of gravity and its control, has reached a stage where profound implications for the entire human race begin to emerge. Perhaps the most startling and immediate implications of all involve aircraft, guided missiles — atmospheric and free space flight of all kinds.

If only one of several lines of research achieve their goal — and it now seems certain that this must occur — gravitational acceleration as a structural, aerodynamic and medical problem will simply cease to exist. So will the task of providing combustible fuels in massive volume in order to escape the earth's gravitic pull — now probably the biggest headache facing today's would-be "space men".

And towards the long-term progress of mankind and man's civilization, a whole new concept of electro-physics is being levered out into the light of human knowledge.

There are gravity research projects in every major country of the world. A few are over 30 years old.<sup>1</sup> Most are much newer.

Some are purely theoretical and seek the answer in Quantum, Relativity and Unified Field Theory mathematics — Institute for Advanced Study at Princeton, New Jersey; University of Indiana's School of Advanced Mathematical Studies; Purdue University Research Foundation; Goettingen and Hamburg Universities in Germany; as well as firms and Universities in France, Italy, Japan and elsewhere. The list, in fact, runs into the hundreds.

Some projects are mostly empirical, studying gravitic isotopes, electrical phenomena and the statistics of mass. Others combine both approaches in the study of matter in its super-cooled, super-conductive state, of jet electron streams, peculiar magnetic effects or the electrical mechanics of the atom's shell. Some of the companies involved in this phase include Lear Inc., Gluhareff Helicopter and Airplane Corp., The Glenn L. Martin Co., Sperry-Rand Corp., Bell Air-

<sup>1</sup> Ultimately they go back to Einstein's general theory of relativity (1916), in which the law of gravitation was first mathematically formulated as a field theory (in contrast to Newton's "action-at-a-distance" concept).  
— Ed.

craft, Clarke Electronics Laboratories, the U.S. General Electric Company.

The concept of weightlessness in conventional materials which are normally heavy, like steel, aluminium, barium, etc., is difficult enough, but some theories, so far borne out empirically in the laboratory, postulate that not only can they be made weightless, but they can in fact be given a negative weight. That is: the force of gravity will be repulsive to them and they will—new sciences breed new words and new meanings for old ones—loft away contra-gravitationally.

## or Weight

In this particular line of research, the weights of some materials have already been cut as much as 30 % by "energizing" them. Security prevents disclosure of what precisely is meant by "energizing" or in which country this work is under way.

A localized gravitic field used as a ponderomotive force has been created in the laboratory. Disc airfoils two feet in diameter



The American scientist Townsend T. Brown has been working on the problems of electrogravitics for more than thirty years. He is seen here demonstrating one of his laboratory instruments, a disc-shaped variant of the two-plate condenser.

and incorporating a variation of the two-plate electrical condenser charged with fifty kilovolts and a total continuous energy input of fifty watts have achieved a speed of seventeen feet per second in a circular air course twenty feet in diameter. More lately these discs have been increased in diameter to three feet and run in a fifty-foot diameter air course under a charge of a hundred and fifty kilovolts with results so impressive as to be highly classified. Variations of this work done under a vacuum have produced much greater efficiencies that can only be described as startling. Work is now under way developing a flame-jet generator to supply power up to fifteen million volts.

Such a force raised exponentially to levels capable of pushing man-carrying vehicles through the air—or outer space—at ultra-high speeds is now the object of concerted effort in several countries. Once achieved it will eliminate most of the structural difficulties now encountered in the construction of high-speed aircraft. Importantly, the gravitic field that provides the basic propulsive force simultaneously reacts on all matter within that field's influence. The force is not a physical one acting initially at a specific point in the vehicle that needs then to be translated to all the other parts. It is an electro-gravitic field acting on all parts simultaneously.

Subject only to the so-far immutable laws of momentum, the vehicle would be able to change direction, accelerate to thousands of miles per hour, or stop. Changes in direction and speed of flight would be effected by merely altering the intensity, polarity and direction of the charge.

Man now uses the sledge-hammer approach to high-altitude, high-speed flight. In the still-short life-span of the turbo-jet airplane, he has had to increase power in the form of brute thrust some twenty times in order to achieve just a little more than twice the speed of the original jet plane. The cost in money in reaching this point has been prodigious. The cost in highly-specialized man-hours is even greater. By his present methods man actually fights in direct combat the forces that resist his efforts. In conquering gravity he would be putting one of his most competent adversaries to work for him. Anti-gravitics is the method of the picklock rather than the sledge-hammer.

The communications possibilities of electro-gravitics, as the new science is called, confound the imagination. There are apparently in the ether an entirely new unsuspected family of electrical waves similar to electro-magnetic radio waves in basic concept.



Townsend Brown's free-flying condenser. If the two arc-shaped electrodes (on the left and right rims) are placed under electrostatic charge, the disc will move, under the influence of interaction between electrical and gravitational fields, in the direction of the positive electrode. The higher the charge, the more marked will be the electrogravitic field. With a charge of several hundred kilovolts the condenser would reach speeds of several hundred miles per hour.

Electro-gravitic waves have been created and transmitted through concentric layers of the most efficient kinds of electro-magnetic and electro-static shielding without apparent loss of power in any way. There is evidence, but not yet proof, that these waves are not limited by the speed of light. Thus the new science seems to strike at the very foundations of Einsteinian Relativity Theory.

But rather than invalidating current basic concepts such as Relativity, the new knowledge of gravity will probably expand their scope, ramifications and general usefulness. It is this expansion of knowledge into the unknown that more and more emphasizes how little we do know; how vast is the area still awaiting research and discovery.

The most successful line of the electro-gravitics research so far reported is that carried on by Townsend T. Brown, an American who has been researching gravity for over thirty years. He is now conducting research projects in the U.S. and on the Continent. He postulates that there is between electricity and gravity a relationship parallel and/or similar to that which exists between electricity and magnetism. And as the coil is the usable link in the case of electro-magnetics, so is the condenser that link in

the case of electro-gravitics. Years of successful empirical work have lent a great deal of credence to this hypothesis.

The detailed implications of man's conquest of gravity are innumerable. In road cars, trains and boats the headaches of transmission of power from the engine to wheels or propellers would simply cease to exist. Construction of bridges and big buildings would be greatly simplified by temporary induced weightlessness etc. Other facets of work now under way indicate the possibility of close controls over the growth of plant life; new therapeutic techniques; permanent fuel-less heating units for homes and industrial establishments; new sources of industrial power; new manufacturing techniques; a whole new field of chemistry. The list is endless . . . and growing.

In the field of international affairs, other than electro-gravitics' military significance, what development of the science may do to raw materials values is perhaps most interesting to contemplate. Some materials are more prone to induced weightlessness than others. These are becoming known as *gravitic isotopes*. Some are already quite hard to find, but others are common and, for the moment, cheap. Since these ultimately may be the vital lofting materials required in the creation of contra-gravitational fields, their value might become extremely high with equivalent rearrangement of the wealth of national natural resources, balance of economic power and world geo-strategic concepts.

How soon all this comes about is directly proportional to the amount of effort that is put into it. Surprisingly, those countries normally expected to be leaders in such an advanced field are so far only fooling around. Great Britain; with her Ministry of Supply and the National Physical Laboratory, apparently has never seriously considered that the attempt to overcome and control gravity was worth practical effort and is now scurrying around trying to find out what it's all about. The U.S. Department of Defense has consistently considered gravity in the realm of basic theory and has so far only put token amounts of money into research on it. The French, apparently a little more open-minded about such things, have initiated a number of projects, but even these are still on pretty much of a small scale. The same is true throughout most of the

world. Most of the work is of a private venture kind, and much is being done in the studies of university professors and in the traditional lofts and basements of badly undercapitalized scientists.

But the word's afoot now. And both Government and private interest is growing and gathering momentum with logarithmic acceleration. The day may not be far off when man again confounds himself with his genius; then wonders why it took him so long to recognize the obvious.

Of course, there is always a possibility that the unexplained 3 % of UFO's, "Unidentified Flying Objects", as the U.S. Air Force calls "flying saucers", are in fact vehicles so propelled, developed already and undergoing proving flights—by whom... U.S., Britain... or Russia? However, if this is so it's the best kept secret since the Manhattan project,

for this reporter has spent over two years trying to chase down work on gravitics and



Author's sketch of a saucer-shaped space ship roughly 50 ft. in diameter, whose lift and propulsion are produced by electrogravitic forces. The vehicle is supported by a "lifting cake" L, consisting of "gravitic lockstep" of negative weight, and is moved in the horizontal plane by propulsion elements T1 and T2.

has drawn from Government scientists and military experts the world over only the most blank of stares.

This is always the way of exploration into the unknown.

Author's diagram illustrating the electrogravitic field and the resulting propulsive force on a disc-shaped electrostatic condenser. The centre of the disc is of solid aluminium. The solid rimming on the sides is porous, and in the trailing and leading edges (seen in the direction of motion) are wires separated from the aluminium core chiefly by air pockets. The wires act in a manner similar to the two plates of a simple electrical condenser and, when charged, produce a propulsive force. On reaching full charge a condenser normally loses its propulsive force, but in this configuration the air between the wires is also charged, so that in principle the charging process can be maintained as long as desired. As the disc also moves—from minus to plus—the charged air is left behind, and the condenser moves into new, uncharged air. Thus both charging process and propulsive force are continuous.



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## HOW I CONTROL GRAVITATION

by

T. Townsend Brown

THE AUTHOR IN 1929 -- ONE OF AMERICA'S  
LEADING PHYSICISTS

THERE IS A DECIDED TENDENCY in the physical sciences to unify the great basic laws and to relate, by a single structure or mechanism, such individual phenomena as gravitation, electro-dynamics and even matter itself. It is found that matter and electricity are very closely related in structure. In the final analysis matter loses its traditional individuality and becomes merely an "electrical condition." In fact, it might be said that the concrete body of the universe is nothing more than an assemblage of energy which, in itself, is quite intangible. Of course, it is self-evident that matter is connected with gravitation, and it follows logically that electricity is likewise connected. These relations exist in the realm of pure energy and consequently are very basic in nature. In all reality *they constitute the true backbone of the universe*. It is needless to say that the relations are not simple, and full understanding of their concepts is complicated by the outstanding lack of information and research on the real nature of gravitation.



The Theory of Relativity introduced a new and revolutionary light to the subject by injecting a new conception of space and time. Gravitation thus becomes the natural outcome of so-called "distorted space." It loses its Newtonian interpretation as a tangible mechanical force and gains the rank of an "apparent" force, due merely to the condition of space itself.

Fields in space are produced by the presence of material bodies or electric charges. They are gravitational fields or electric fields according to their causes. Apparently they have no connection one with the other. This fact is substantiated by observations to the effect that electric fields can be shielded and annulled while gravitational fields are nearly perfectly penetrating. This dissimilarity has been the chief hardship to those who would compose a Theory of Combination.

It required Dr. Einstein's own close study for a period of several years to achieve the results others have sought in vain and to announce with certainty the unitary field laws.

Einstein's field theory is purely mathematical. It is not based on the results of any laboratory test and does not, so far as is now known, predict any method by which an actual demonstration or proof may be made. The new theory accomplishes its purpose by "rounding out" the accepted Principles of Relativity so as to embrace electrical phenomena.

The Theory of Relativity thus supplemented represents the last word in mathematical physics. It is most certainly a theoretical structure of overpowering magnitude and importance. The thought involved is so far reaching that it may be many years before the work is fully appreciated and understood.

#### Early Investigations

The writer and his colleagues anticipated the present situation even as early as 1923, and began at that time

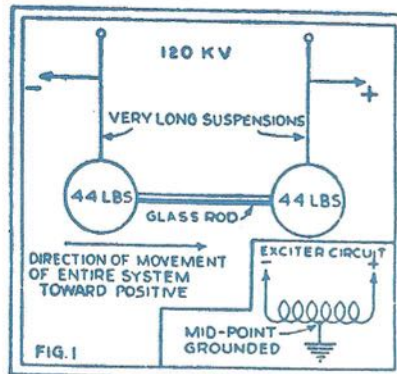


THE ELECTRO-GRAVITIC PENDULUM AS IT IS SET UP IN THE AUTHOR'S LABORATORY. IT IS BY MEANS OF THIS EQUIPMENT, TOGETHER WITH ACCURATE RECORDING MACHINES, THAT THE RELATIVE GRAVITATIONAL EFFECTS OF THE SUN, MOON, AND THE PLANETS CAN BE OBSERVED.

to construct the necessary theoretical bridge between the two then separate phenomena, electricity and gravitation. The first actual demonstration of the relation was made in 1924. Observations were made of the individual and combined motions of two heavy lead balls which were suspended by wires 45 cm. apart. The balls were given opposite electrostatic charges and the charges were maintained. Sensitive optical methods were employed in measuring the movements, and as near as could be observed the balls appeared to behave according to the following law: "Any system of two bodies possesses a mutual and unidirectional force (generally in the line of the bodies) which is directly proportional to the product of the masses, directly proportional to the potential difference and inversely proportional to the square of the distance between them."

THE PECULIAR RESULT IS THAT THE GRAVITATIONAL FIELD OF THE EARTH HAD NO APPARENT CONNECTION WITH THE EXPERIMENT. THE GRAVITATIONAL FACTORS ENTERED THROUGH THE CONSIDERATION OF THE MASS OF THE ELECTRIFIED BODIES.

The newly discovered force was quite obviously the resultant physical effect of an electro-gravitational interaction. It represented the first actual evidence of the very basic relationship. The force was named "gravitator action" for want of a better term and the apparatus or system of masses employed was called a "gravitator."



A SIMPLE TYPE OF GRAVITATOR IS SHOWN IN THE ABOVE ILLUSTRATION.

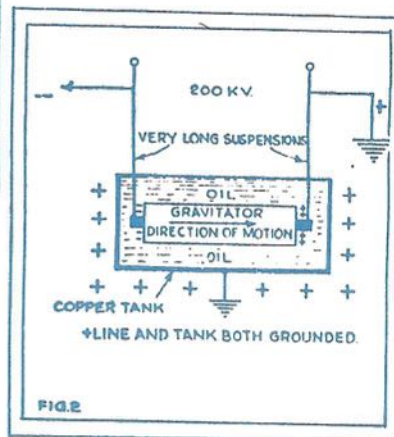
Since the time of the first test the apparatus and the methods used have been greatly improved and simplified. Cellular "gravitators" have taken the place of the large balls of lead. Rotating frames supporting two and four gravitators have made possible acceleration measurements. Molecular gravitators made of solid blocks of massive dielectric have given still greater efficiency. Rotors and pendulums operating under oil have eliminated atmospheric considerations as to pressure, temperature and humidity. The disturbing effects of ionization, electron emission and pure electro-statics have likewise been carefully analyzed and eliminated. Finally after many years of tedious work and with refinement of methods we succeeded in observing the gravitational variations produced by the moon and sun and the much smaller variations produced by the different planets. It is a curious fact that the effects are most pronounced when the affecting body is in the alignment of the differently

charged elements and least pronounced when it is at right angles.

Much of the credit for this research is due Dr. Paul Alfred Biefield, Director of Swasey Observatory. The writer is deeply indebted to him for his assistance and for his many valuable and timely suggestions.

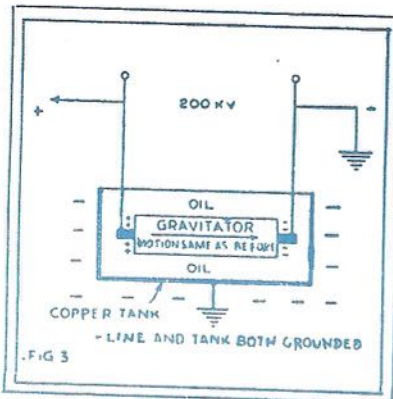
#### Gravitator Action an Impulse

Let us take, for example, the case of a gravitator totally immersed in oil but suspended so as to act as a pendulum and swing along the line of its elements.



THE PRINCIPLE OF THE ELECTRO-GRAVITIC PENDULUM IS SHOWN HERE. GRAVITATOR MOVES IN A DIRECTION OPPOSITE TO THAT REQUIRED BY THE LAWS OF ELECTROSTATIC ATTRACTION AND REPULSION.

When the direct current with high voltage (75—300 kilovolts) is applied the gravitator swings up the arc until its propulsive force balances the force of the earth's gravity resolved to that point, then it stops, but it does not remain there. The pendulum then gradually returns to the vertical or starting position even while the potential is maintained. The pendulum swings only to one side of the vertical. Less than five seconds is required for the test pendulum to reach the maximum amplitude of the swing but from thirty to eighty seconds are required for it to return to zero.

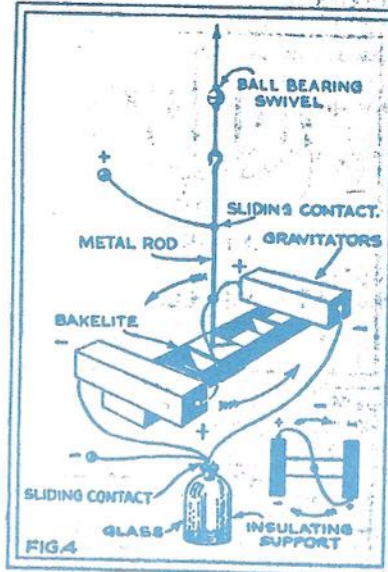


REVERSING POLARITY DOES NOT CHANGE DIRECTION, EXTENT OR DURATION OF GRAVITATOR IMPULSE.

The total time or the duration of the impulse varies with such cosmic conditions as the relative position and distance of the moon, sun and so forth. It is in no way affected by fluctuations in the supplied voltage and averages the same for every mass or material under test. The duration of the impulse is governed solely by the condition of the gravitational field. It is a value which is unaffected by changes in the experimental set-up, voltage applied or type of gravitator employed. Any number of different kinds of gravitators operating simultaneously on widely different voltages would reveal exactly the same impulse duration at any instant. Over an extended period of time all gravitators would show equal readings and equal variations in the duration of the impulse.

After the gravitator is once fully discharged, its impulse exhausted, the electrical potential must be removed for at least five minutes in order that it may recharge itself and regain its normal gravitic condition. The effect is much like that of discharging and charging a storage battery, except that electricity is handled in a reverse manner. When the duration of the impulse is great the time required for complete recharge is likewise great. The times of discharge and recharge are always proportional. Technically speaking, the exo-gravitic rate and the

endo-gravitic rate are proportional to the gravitic capacity.



A GRAVITATOR ROTOR IS SIMPLY AN ASSEMBLY OF UNITS SO MADE THAT ROTATION RESULTS UNTIL THE IMPULSE IS EXHAUSTED.

Summing up the observations of the electro-gravitic pendulum the following characteristics are noted:

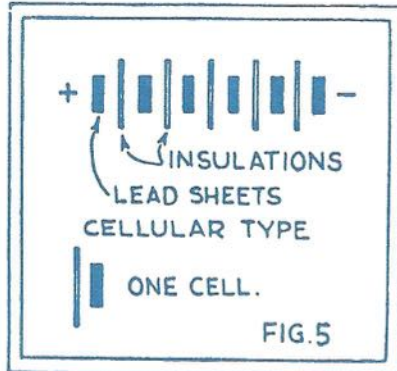
APPLIED VOLTAGE determines only the amplitude of the swing.

APPLIED AMPERAGE is only sufficient to overcome leakage and maintain the required voltage through the losses in the dielectric. Thus the total load approximates only 37 ten-millionths of an ampere. It apparently has no other relation to the movement at least from the present state of physics.

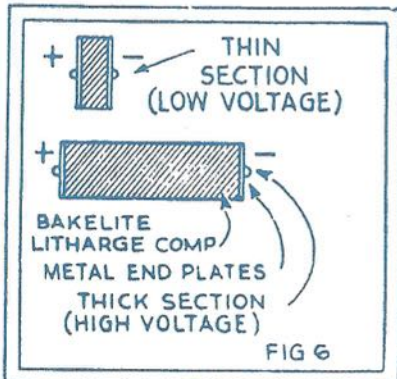
MASS of the dielectric is a factor in determining the total energy involved in the impulse. For a given amplitude an increase in mass is productive of an increase in the energy exhibited by the system ( $E = mg$ ).

DURATION OF THE IMPULSE with electrical conditions maintained is independent of all of the foregoing factors. It is governed solely by external gravitational conditions, posi-

tions of the moon, sun, etc., and represents the total energy or summation of energy values or levels which are effective at that instant.



THE CELLULAR GRAVITATOR IS BUILT IN THE FORM OF A HIGH VOLTAGE SERIES CONDENSOR.



THE MOLECULAR TYPE GRAVITATOR IS MADE WITH A DIELECTRIC BLOCK AND METAL END PLATES OR ELECTRODES.

GRAVITATIONAL ENERGY LEVELS are observable as the pendulum returns from the maximum deflection to the zero point or vertical position. The pendulum hesitates in its return movement on definite levels or steps. The relative position and influence of these steps vary continuously every minute of the day. One step or energy

value corresponds in effect to each cosmic body that is influencing the electrified mass or gravitor. By merely tracing a succession of values over a period of time a fairly intelligible record of the paths and the relative gravitational effects of the moon, sun, etc., may be obtained.

In general then, every material body possesses inherently within its substance separate and distinct energy levels corresponding to the gravitational influences of every other body. These levels are readily revealed as the electro-gravitic impulse dies and as the total gravitic content of the body is slowly released.

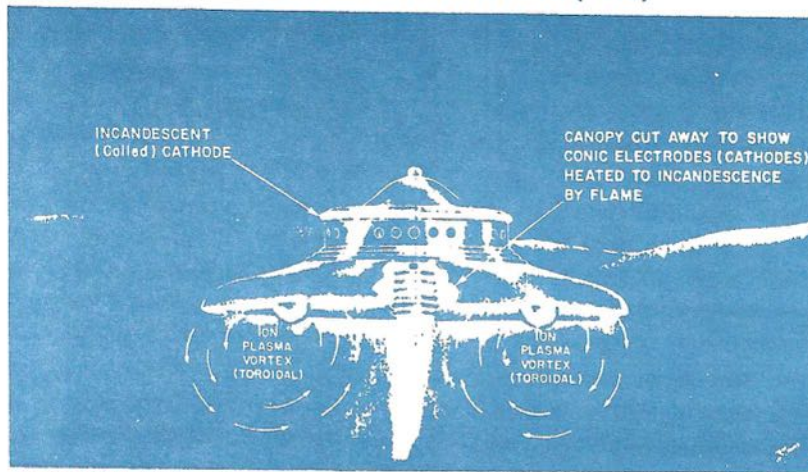
The gravitor, in all reality, is a very efficient electric motor. Unlike other forms of motors it does not in any way involve the principles of electro-magnetism, but instead it utilizes the newer principles of electro-gravitation. A simple gravitor has no moving parts but is apparently capable of moving itself from within itself. It is highly efficient for the reason that it uses no gears, shafts, propellers or wheels in creating its motive power. It has no internal mechanical resistance and no observable rise in temperature. Contrary to the common belief that gravitational motors must necessarily be vertical-acting the gravitor, it is found, acts equally well in every conceivable direction.

While the gravitor is at present primarily a scientific instrument, perhaps even an astronomical instrument, it also is rapidly advancing to a position of commercial value. Multi-impulse gravitors weighing hundreds of tons may propel the ocean liners of the future. Smaller and more concentrated units may propel automobiles and even airplanes. Perhaps even the fantastic "space cars" and the promised visit to Mars may be the final outcome. Who can tell?\_

## THE FLYING SAUCER

THE APPLICATION OF THE BIEFELD-BROWN EFFECT TO  
THE SOLUTION OF THE PROBLEMS OF SPACE NAVIGATION

by Mason Rose, Ph.D., President  
University for Social Research (1952)



SUGGESTED PROTOTYPE VEHICLE WITH FLAME-JET HIGH-VOLTAGE GENERATOR. THIS UNIT, INITIALLY, MAY BE POWERED BY KEROSENE OR EQUIVALENT.

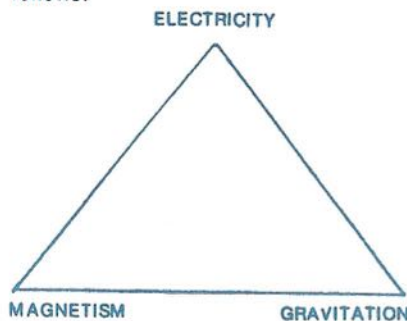
The scientist and layman alike encounter a primary difficulty in understanding the *Biefeld-Brown* effect and its relation to the solution of the flying saucer mystery.

A proper interpretation of this theory is prevented because both scientist and layman are conditioned to think in electromagnetic concepts, whereas the *Biefeld-Brown* effect relates to *electrogravitation*.

Their lack of awareness is justifiable, however, because the data on electrogravitation, inasmuch as it is a comparatively recent and unpublished development, has limited availability and circulation. Townsend Brown, the discoverer of electrogravitational coupling, is the only known experimental scientist in this new area of scientific development as of this writing. Thus, anyone wanting to understand electrogravitation and its application to astronautics must dismiss the principles of electromagnetics in order to grasp the essentially different principles of electrogravitation. Electrogravitational effects do not obey the known principles of electromagnetism. *Electrogravitation must be understood as an entirely new field of scientific investigation and technical development.*

The most efficient method of effecting an understanding of electrogravitation is to review the evolutionary development of electromagnetism.

From the smallest atom to the largest galaxy, the universe operates on three basic forces, namely *Electricity, Magnetism and Gravitation*. These forces can be represented as follows:



Taken separately, these forces are of no real practical use. Electricity by itself is static electricity and therefore functionless. It will make your hair stand on end, but that is about all.

Magnetism by itself has very few practical applications aside from the magnetic compass, and gravity simply keeps objects and people pinned to the earth.

However, when they are used to work in combination with each other, almost endless technical applications come into being. Currently, our total electrical development is based on the coupling of electricity with magnetism, which provides the basis for the countless uses we make of electricity in modern societies.

Farraday conducted the first productive empirical experiment with electromagnetism around 1830, and Maxwell did the basic theoretical work in 1865.

The application of electromagnetism to microscopic and sub-microscopic particles was accomplished by Max

Planck's work in quantum physics about 1890; and then in 1905 Einstein came forward with relativity, which dealt with gravitation as applied to celestial bodies and universal mechanics.

It is principally out of the work of these four great scientists that our electrical developments, ranging from the simple light bulb to the complexities of nuclear physics, have emerged.

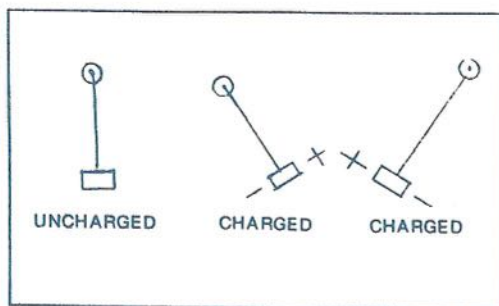
In 1923, Dr. Biefeld, Professor of Physics and Astronomy at Dennison University and a former classmate of Einstein in Switzerland, suggested to his protege, Townsend Brown, certain experiments which led to the discovery of the Biefeld-Brown effect, and ultimately to the electrogravitational energy spectrum. *Biefeld wondered if an electrical condenser, hung by a thread, would have any tendency to move when it was given a heavy electrical charge. Townsend Brown provided the answer. There is such a tendency.*

After 28 years of investigation by Brown into this coupling effect between electricity and gravitation, it was found that for each electromagnetic phenomenon there exists an electrogravitational analogue. This means, from the technical and commercial viewpoint, potentialities for future development and exploitation are as great or greater than the present electrical industry. When one considers that electromagnetism is basic to the telephone, telegraph, radio, television, radar, electric generators and motors, power production and distribution, and is an indispensable adjunct to transportation of all kinds, one can see that the possibility of a parallel, but different, development in electrogravitation has almost unlimited prospects.

The initial experiments conducted by Townsend Brown, concerning the behavior of a condenser when charged with electricity, had the characteristic,

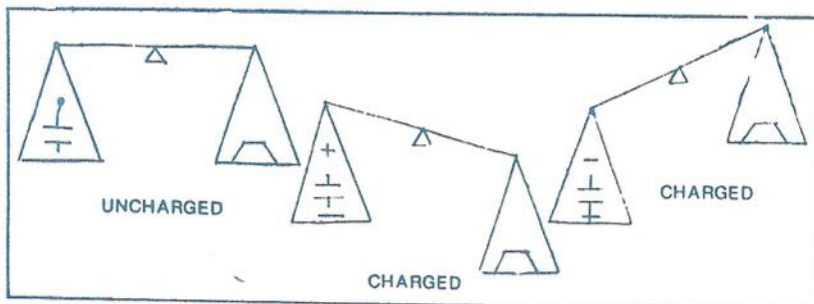
of simplicity which has marked most other great scientific advancements.

The first startling revelation was that if placed in free suspension with the poles horizontal, the condenser, when charged, exhibited a forward thrust toward the positive poles. A reversal of polarity caused a reversal of the direction of thrust. The experiment was set up as follows:



The antigravity effect of vertical thrust is demonstrated by balancing a condenser on a beam balance and then charging it. After charging, if the positive pole is pointed upward, the condenser moves up.

If the charge is reversed and the positive pole pointed downward, the condenser thrusts down. The experiment is conducted as follows:



These two simple experiments demonstrate what is now known as the *Biefeld-Brown effect*. It is the first and, to the best of our knowledge, the only method of affecting a gravitational field by electrical means. It contains the seeds of control of gravity by man. The intensity of the effect is determined by five factors, which are:

1. The separation of the plates of the condenser, the closer the plates, the greater the effect.
2. The ability of the material between the plates to store the electrical energy in the form of elastic stress. A measure of this ability is

called the "K" of the material. The higher the "K", the greater the *Biefeld-Brown effect*.

3. The area of the plates, the greater area giving the greater effect.
4. The voltage difference between the plates; more voltage, more effect.
5. The mass of the material between the plates; the greater the mass, the greater the effect.

It is this fifth point which is inexplicable from the electromagnetic viewpoint and which provides the connection with gravitation.

On the basis of further experimental work from 1923 to 1926; Townsend Brown in 1926, described what he called a "space car." This was a revolutionary method of terrestrial and extra-terrestrial flight, presented for experiment while motor propelled planes were yet in a primitive stage.

This engineering feat by Townsend Brown was all the more remarkable when we consider such a machine produces thrust with no moving parts, does not use any aerodynamic principles of flight, and has neither control surfaces, or a propeller. **Townsend Brown had discovered the secret of how the flying saucers fly years before any such objects were reported.**

Now that the basic differences between electromagnetism and electrogravity have been described and the basic principles of the Biefeld-Brown effect have been outlined, we are finally ready to understand the principles of astronautics or the conquest of space.

The earth creates and is surrounded with a gravitational field which approaches zero as we go far into space. This field presses objects and people to the earth's surface; hence it presses a saucer object to the earth.

However, through the utilization of the Biefeld-Brown effect, the flying

saucer can generate an electrogravitational field of its own which modifies the earth's field.

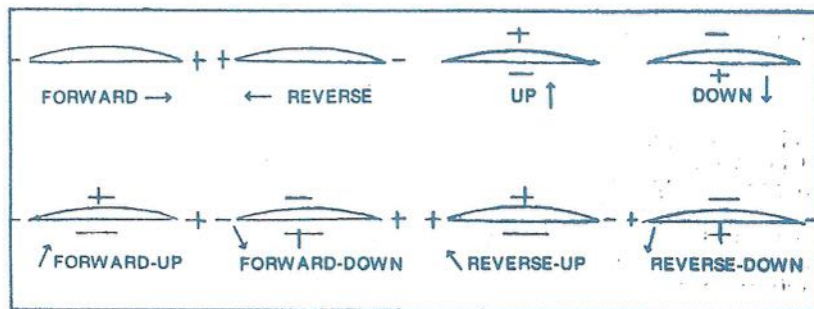
This field acts like a wave, with the negative pole at the top of the wave and the positive pole at the bottom, the saucer travels like a surfboard on the incline of a wave that is kept continually moving by the saucer's electrogravitational generator.

Since the orientation of the field can be controlled, the saucer can thus travel on its own continuously generated wave in any desired angle or direction of flight.

Since the saucer always moves toward its positive pole, the control of the saucer is accomplished by varying the orientation of the positive charge. Control, therefore, is gained by switching charges rather than by the control surfaces. Since the saucer is travelling on the incline of a continually moving wave which it generates to modify the earth's gravitational field, no mechanical propulsion is necessary.

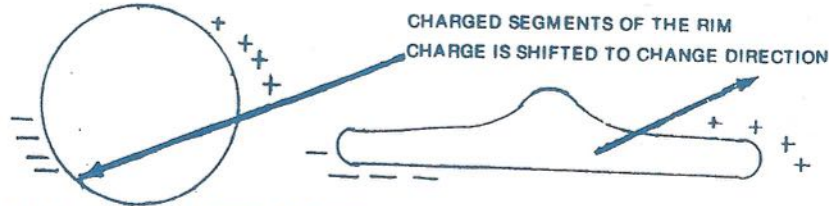
Once we understand that the horizontal and vertical controls are obtained by shifting the positive pole which turns the field, then we are in a position to extrapolate a finished saucer design.

*The method of controlling the flight of the saucer is illustrated by the following simple diagrams showing the charge variations necessary to accomplish all directions of flight.*





The top view would be as follows:



UPPER PLATE CHARGED POSITIVE, LOWER NEGATIVE, FOR LIFT, RESULTANT DIRECTION BETWEEN THRUST AND LIFT INDICATED BY ARROW.

The saucer's edge would contain a number of conductor segments, and the saucer would turn in any direction simply by shifting the positive and negative charges to appropriate positions along its edge.

The vertical thrust would be regulated by varying the positive charge on top of the saucer, the amount of thrust being regulated by the amount of charge generated.

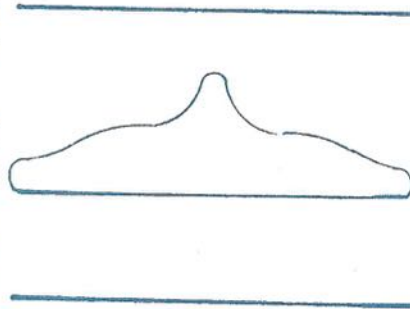
In all probability, flying saucers do not utilize external controls for direction, nor do they have any visible means of propulsion. Flying saucers travel using the Biefeld-Brown electrogravitational effect, and hence do not utilize any of the standard aerodynamic principles of an airfoil. Flying saucers cannot be understood from the traditional principles of aeronautical engineering; however, the older points of view are useful for critical theoretical analysis and empirical testing.

Before UFO's were ever seen and validly reported, Townsend Brown developed a captive flying saucer — a scale model saucer with a free bearing going around a stationary pole.

Brown did not start with round objects, in fact, the first object that flew was a triangle, the next a square, then a square with the edges cut off, and finally a round shaped saucer.

Eventually, experiments proved the saucer shape most effective. Changes were made for empirical reasons.

Having solved the problem of horizontal thrust, Townsend Brown developed a profile shape which would be most efficient to navigate the electrogravitational field for maximum vertical thrust. The final profile that developed was the shape illustrated here:



The first report of a disc-shaped object in the sky dates back to the sixteenth century. At long intervals during the centuries since then have come other reports. Most of them are undoubtedly unreliable as observations, distorted by telling and retelling. But in these older reports, as well as in the very numerous series which has accumulated since 1947, there is a teasing common thread concerning appearance and behavior which makes any certainties about the unreality of flying saucers very insecure.

One of the great difficulties in substantiation of these reports is that, in both appearance and behavior, these objects seem to be simple scientific impossibilities. Here are some of the reasons advanced by technical men to

prove the impossibility of devices such as the reports describe:

1. **The reports reveal**, in most cases, no method of propulsion which can be understood. There are no propellers in any of the reports. Some of the reports describe a long flame jet trailing behind a cigar shaped object. But this flame is orange-red in color, indicating an inefficient combustion which would make it ineffective as a reaction jet such as propels rockets and jet planes. No other known physical laws seemed capable of explaining the observed motion of the objects.

2. **The reports describe** a range of speed and acceleration from stationary hovering to speeds greater than present day rockets can deliver, and the changes of rate of motion, the accelerations, are far beyond the capacities of any known man-made vehicles. Flight experts point out that such accelerations would impose impossible stresses on any human or human like occupants. Therefore, they say, the reports must be false or erroneous.

3. **Many of the reports** concern night sightings and describe a glow, usually of blue or violet color, around a periphery of the objects. Physicists have noted that such a glow is characteristic of a very high voltage electrical discharge, but add that this suggests no means of explaining the appearance or behavior of the objects described in the reports.

4. **The description** of shapes and performance seems to indicate a complete or almost complete disregard of aerodynamic principles. The objects seem not to need the support of air as a plane does, nor to depend on the lift provided by properly designed surfaces moved rapidly through an air medium.

These are weighty arguments, **PROVIDED THE ASSUMPTIONS BEHIND THEM ARE CORRECT.** As I have previously indicated, the observed

motion of a charged condenser has been labeled the Biefeld-Brown effect.

Studying this effect, Brown pointed out in 1923 that this tendency of a charged condenser to move might easily grow into a new and basically different method of propulsion.

By 1926 he had described a "space-car" utilizing this new principle.

By 1928 he had built working models of a boat propelled in this manner:

By 1938 he had shown that his specially designed condensers not only moved, but had certain interesting effects on plants and animals.

All of this, while very exciting, is for most of us just a repetition and reinforcement of the rapid scientific development so characteristic of our age. But then came the unexpected. Townsend Brown, working in his laboratory, building models and trying endless variations of size, shape and design of his charged condensers, made a flying saucer which flew around a maypole, before flying saucers became a newspaper topic. **And the reasons listed above, which led the specialists to reject the reports on observed saucers, proved to be both explicable and necessary to their operation under the electrogravitational principle.**

Let us look at the four main objections in a new light:

1. **No understood method of propulsion.** The saucers made by Brown have no propellers, no jets, no moving parts at all. They create a modification of the gravitational field around themselves, which is analogous to putting them on the incline of a hill. They act like a surfboard on a wave. The surfboard moves without propellers or jets too, but it is confined to the direction and speed of the water wave. The electrogravitational saucer creates its own "hill," which is a local distortion of the gravitational field, then it takes this "hill" with it in any chosen direction and at any rate.

2. **The second objection** concerned the tremendous accelerations which on the basis of previous technology, would subject any animal occupants to unbearable stresses. But, says Brown, the occupants of one of his saucers would feel no stress at all, no matter how sharp the turn or how great the acceleration. This is because the ship and the occupants and the load are all responding equally to the wavelike distortion of the local gravitational field. In an airplane the propeller pumps air backward and, by reaction, the plane moves forward. The reaction thrust on the propeller is transferred to the frame of the aircraft. This frame then shoves the load and occupants forward **CONTRARY TO THEIR NATURAL TENDENCY TO MOVE AT A CONSTANT RATE IN A CONSTANT DIRECTION**. But in the saucer no such transfers of thrust from one member to another occurs. The entire assembly moves in unison in response to the locally modified gravitational field. The nearest analogy in our experience is going down in an elevator. When the elevator starts down, it is not necessary for the elevator to shove on our bodies, both elevator and passengers share a gravitational tendency to move down. They do so without any shoving or any stresses between elevator and passengers.

3. **Townsend Brown's saucers** require a highly charged leading edge — the positive pole. But such a charged pole produces an electrical corona. In the largest models made, this develops a decided bluish-violet glow easily visible in darkness or a dim light. A full scale ship operating on this principle would be expected to produce a spectacular corona effect visible for many miles.

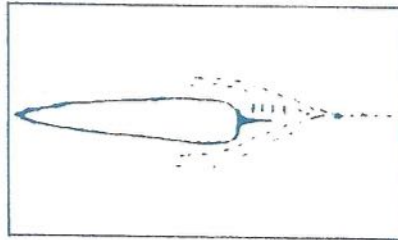
4. **The outlines and shape** of Brown's saucers were the result of electrogravitational considerations, not the result of wind tunnel tests of aerodynamic designs. For they move,

not on the lift of air, but on the lift of a modified gravitational field. In operating saucers such aerodynamic considerations would have to be taken into account to reduce drag and friction, but not to produce lift and thrust.

5. **And, finally**, when Brown turned his attention to improved ways of generating high voltages, the most promising new method involved the use of a flame jet to convey negative charges astern. This flame was relatively inefficient as a generator if it was adjusted for the best combustion of the fuel. But if it was adjusted to an orange-red color, indicating incomplete combustion of fuel, it conveyed the charges very effectively and set up the required negative space charge behind the ship.

The reasons advanced by the experts to "explain away" the saucer reports, when seen from a new and different viewpoint appear to be the specific reasons why they can operate, on electrogravitational rather than electromagnetic principles.

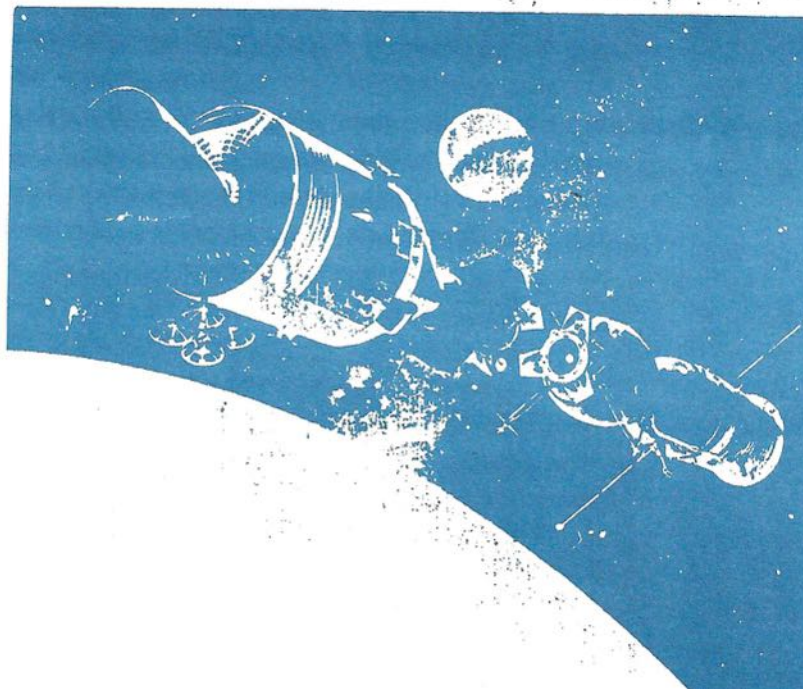
The next opinion which must be corrected is the idea of overly intensified supersonic vibration. The Townsend Brown experiments indicate that the positive field which is traveling in front of the saucer acts as a buffer wing which starts moving the air out of the way. This immaterial electrogravitational field acts as an entering wedge which softens the supersonic barrier, thus allowing the material leading edge of the saucer to enter into a softened pressure area. Diagrammed, this would be illustrated as follows:



It should be noted that in a jet plane or guided missile the extra weight added to create the Biefeld-Brown electrogravitational effect would be compensated for by the added thrust created by the movement of the plane toward the positive field created in front of the leading edge.

As we have previously stated, for every known electromagnetic effect,

there is an analogous electrogravitational effect but electrogravitational application and results differ from those of electromagnetic. This presupposes that an entire new electrogravitational industry comparable to the present electromagnetic industry will emerge from the theoretical formulations and empirical experiments of Townsend Brown.



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## AN OVERVIEW

### HAZARDS OF LOW LEVEL RADIOACTIVITY

Low level radioactivity includes the on-going amount of radiation released from the everyday operation of the world's 433 nuclear power plants, plus leaks and accidents.

- (1) **INFERTILITY**                      Radiation causes infertility. The global fertility rate has dropped nearly half since 1955.
  
- (2) **WEAKENED IMMUNE SYSTEM** Radiation weakens the immune system. A hundred nation study on quality of health found the United States was number one in 1943. By 1992, the United States was number 100, according to a U.S. Public Health Statistics Report. Globally health is deteriorating with incidence of cancer, heart, allergies and infectious diseases increasing.
  
- (3) **MUTATED VIRUS AND BACTERIA**                      Even at low levels radiation may increase mutations of bacteria and virus. Mutations are causing the appearance of new diseases such as Reyes Syndrome, Legionnaire's Disease and Lyme Disease.
  
- (4) **LOSS OF OXYGEN GLOBALLY**                      The percentage of oxygen in the air is down to about 19 percent. The expected amount is 21 percent of oxygen. Oxygen is formed by trees and plankton. Trees and plankton are killed by radiation.
  
- (5) **OZONE BREAKDOWN**                      Large-scale breakdown of the protective ozone layer in the stratosphere was initiated in 1958 by high atmosphere bomb tests, and continues due to releases from power plants and reprocessing plants. Radioactive Krypton-85 goes to the stratosphere where it greatly enhances CFC ozone damage.
  
- (6) **SOLUTIONS**                      Clean, renewable energies: solar, thermal, photovoltaic, wind, biomass, hydro and other renewable technologies.

**(1) INFERTILITY**

The global fertility rate has dropped by nearly half since 1955! The cumulative effects of radiation-caused infertility raise the possibility of gradual human extinction. We may be concerned about the Pentagon backed globalization of trade, but there are more important worries. This trade scenario to sell more goods is built on the quicksand assumption that there will continue to be consumers.

Projected sales and quarterly growth are predicated on one variable that can no longer be counted on -- living consumers. Escalating infertility in the United States has forced couples to turn to the fast emerging new world of assisted reproduction and pre-made embryos in ever-growing numbers.

A front page *New York Times* article of November 23, 1997, "Clinics Selling Embryos Made for Adoption" explains "Anguished infertile couples are more than willing to pay for whatever infertility clinics can offer."

Fear of the "population bomb" of the 1960's has turned into the "birth dearth" of the 1990's.

The so-called replacement rate is 2.1 children, which is needed to keep the population from falling. The current fertility rate in the developed nations is 1.6 children per woman. In the less developed countries it is now 3 and falling.

United States rates are below replacement for the last 25 years. From 1950 to 1955 the global fertility rate was 5. Today the total fertility rate is 2.8.

According to a 1996 United Nations report, "World Population prospects: The 1996 Revision." Fifty one nations with 44 percent of the world's people are now at, or below the replacement requirements.

Dr. John Gofman, an eminent scientist, medical doctor and eloquent spokesman against the hazards of nuclear power, explained back in the 1970's, in his book Population Control Through Nuclear Pollution, "that the worry about over-population would become a non-worry due to radioactivity."

This is confirmed in the decline in fertility among those born at the time of atmospheric bomb testing (1955-1963) see chart on next page.

Dr. Rosalie Bertell, mathematician, epidemiologist and President of International Institute of Concern for Public Health has been researching infertility for some years and feels it is the "cutting edge" of radiation health damage, surpassing immune damage in the extent of its implications, as it raises the possibility of human extinction.

In response to questions on the status of this research, Dr. Rosalie Bertell writes in a personal correspondence (November 1997): "We found in Kerala, India, that when comparing people matched for socioeconomic status, class, religion, occupation and life style, those living on the high radiation background (300 to 3000 mrad per year) had twice the rate of couples who want children but are unable to have children, then we found for those living on the normal background soil (below 300 mrad per year). This has been released in press statements but it is not published. You will have to take my word for it."

The Baby Boomers are the group born in the USA after the war, the years 1945 through 1963, and these are the years of atmospheric bomb testing as well as the start of the nuclear power industry. They show a high rate of immune related diseases and also an increasing rate of infertility. Data from the U.S. Public Health Service illustrate the difference between fertility in the Baby Boomers and those who are called Pre-Baby Boomers:

<b>Percent Women Infertile, by Age U.S. 1965 and 1976</b>			
	<b><u>Percent Infertile in 1965</u></b>	<b><u>Percent Infertile in 1976</u></b>	<b><u>Percent Change</u></b>
<b><u>Baby Boomers</u></b>			
Age 15-19	0.6	2.0	+1.4
Age 20-24	3.4	5.6	+2.2
Age 25-29	6.1	8.4	+2.3
<b><u>Pre-Baby Boomers</u></b>			
Age 30-34	10.8	9.5	-1.3
Age 35-39	13.4	11.4	-2.0
Age 40-44	18.5	14.6	-3.9

*(Reproductive Impairments Among Married Couples United States U.S. Public Health Service, Washington, D.C., December 1982)*

Two surveys, in 1965 and 1976, show that the percent of infertility of the baby boomers increased, and the percent of infertility of the pre-baby boomers born before bomb testing and nuclear power, decreased.



## (2) WEAKENED IMMUNITY

On the correlation between low dose radiation and weakened immunity, radiation physicist, Dr. Ernest Sternglass, states in a 1986 article: It appears that perhaps the most serious unanticipated effects of fallout is long-term, persistent immune deficiency." And he clarifies, "It can weaken the immune defenses of the body at very low total doses leading to unexpectedly large increases in infectious diseases and cancers." (*Int. J. Biosocial Res.*, July 1986, p. 18)

Initially zealous misrepresentation of the facts led the public to understand that small amounts of radiation were of no special concern. Yet these low levels are exactly the cause of weak immunity and resulting diseases.

Authorities couldn't ignore emerging data and in December 1989, the government sponsored National Academy of Sciences stated in a report titled *Biological Effects of Radiation* that there was no safe level of radiation.

Low protracted doses of radiation cause physiological damage through the formation of free radicals. A free radical is a molecule with an imbalance in electrons which can destabilize other molecules resulting in cellular damage and disease.

In high, short doses like the Hiroshima bomb blast, radiation primarily causes direct damage to the nucleus of cells where the genes are located that control the functioning of the cell. In contrast, low doses acting continuously over time produce their damage indirectly through the generation of free radicals that destroy cell-membranes, hundreds to thousands of times more efficiently than might be expected in calculations related to high-dose damage. So the everyday

amount of radiation that is released as part of the normal operation of the world's 400 nuclear power plants is a very grave concern. Nuclear power plants must have releases in order to function, and these releases, even though they may be partially filtered, allow radiation to go into our air and drinking water, and onto farmland and into our food.

The everyday releases of low-level radioactivity by nuclear power plants has been found to cause several kinds of health damage including premature births, congenital defects, infant mortality, mental retardation, heart ailments, arthritis, diabetes, allergies, asthma, cancer, genetic damage and chronic fatigue syndrome. It has been linked to previously unknown infectious diseases, and the resurgence of old ones by damaging the developing white blood cells originating in the bone marrow and thus weakening the immune system.

Dr. Sternglass conjectures what could happen: "With countless thousands of persons having a weaker and weaker immune system as the result of increasing radioactive contamination of the air and food chain, an AIDS mutation-like disease could become a new Black Plague. It's not conceivable that entire nations could be decimated." (Interview in National Catholic Reporter, October 16, 1997)

### (3) MUTATED BACTERIA AND VIRUS

It is well known that radiation can cause mutations in bacteria and viruses. Andrei Sakharov, the famous Russian physicist, described in his 1992 Memoirs that even at low levels radiation could increase mutations of bacteria and viruses. His predictions which were originally made in 1958, have come true and we are seeing new ailments such as Reyes Syndrome which first appeared in 1963, and Legionnaire's Disease which is caused by a bacteria that was not threatening prior to 1976. AIDS may be related to a mutated virus combined with a weakened immunity in a generation born after the first nuclear weapons were detonated.

Of particular interest is Lyme Disease which first appeared in 1975 near the Millstone and Haddam Neck nuclear power plants in Connecticut. Dr. Jay Gould in Deadly Deceit (1990 Four Walls) describes: "In 1975 there were 59 cases of Lyme Disease recorded; in 1985 the number increased to 863, mainly in the two counties of Middlesex and New London, CT near the Millstone Nuclear Power Plant. Just as increases in cancer may be linked to the huge radiation release from Millstone in 1975, so too may be the tick-borne Lyme Disease epidemic. The Lyme Disease is carried by a spirochete that had not been as harmful to humans prior to 1975. It is well known that radiation can cause mutations in bacteria. The enormous 1975 Millstone radiation release may have caused just such a mutation in the tick-borne spirochete." So we have a double challenge -- the weaker immune system, and the new diseases resulting from mutated pathogens.

Dr. Ernest Sternglass explains:

"When the radiation from such isotopes as strontium-89 and 90 in the bone marrow mutates an existing virus that invades the T-cells of the immune system and kills them in the process of replication, the stage is set for the complete collapse of the immune defenses, and resulting death from opportunistic infections or cancer." ("The Implications of Chernobyl for Human Health", *International Journal of Biosocial Research*, p. 19, July 1986)

#### (4) LOSS OF OXYGEN GLOBALLY

Walter Russell, a visionary artist and scientist, predicted in his book Atomic Suicide? published in 1957 that due to man-made radioactivity we would experience a loss of oxygen in the air that we breathe. In a similar way to the predictions of Andrei Sakharov in the 1950's, Walter Russell's foresight is now coming true. Our current oxygen resources are low. The percentage of oxygen in the air is down to about 19 percent. (*BioTech News* 1997) The expected amount is 21 percent oxygen. Some experts say that we may have originally evolved in an atmosphere of 38 percent oxygen. But now, due to the loss of forests and ocean plankton, our two sources of oxygen production, measurements of oxygen as low as 12 percent and 15 percent have been made in heavily industrialized areas. This oxygen-depleted condition is a contributing cause of the generalized lack of well-being that many are experiencing. And it does not look good for the future. We need oxygen to live!

Trees and green plants provide about half, and plankton provide the other half of our

oxygen. Phytoplankton, which are the base of the marine food chain, is declining. Various studies confirm this: plankton in parts of the Antarctic Ocean is declining up to 12 percent. (S. Weiler. Testimony to Senate Commerce Committee, November 15, 1991)

Trees absorb radioactive carbon-14 in place of stable forms of carbon and in this way they are gradually killed. The book, The Petkau Effect, by Ralph Graeb tells how radioactivity has harmed trees and forests: "It is assumed that the decisive physiological damage resulting in current forest death must have begun during the 1950's. This is depicted in a reduction in density and width of tree rings, and in reduced growth, which is true in the Northern Hemisphere and in the Himalayas.... Neither aging, location, nor climate can be considered as the possible sole cause of damage.... The growth ring of a tree shows exactly what effects the tree has experienced, both in terms of time and seriousness.... During the 1950's and 1960's, there must have been a global wave of air pollution which caused the initial damage."

The author speculates that it could not be just the usual chemicals which are so damaging the trees. And he explains that these trees are mainly within the 30th to 60th parallels of northern latitude. "This zone contains the most nuclear power plants -- over 300 -- and almost all nuclear reprocessing centers. Also, the vast majority of nuclear weapons tests occurred in this area."

**(5) OZONE BREAKDOWN**

The protective layer of ozone around the Earth filters solar and cosmic rays from reaching our planet. Ozone surrounds the Earth in a layer between six and thirty miles above sea level. It is formed when light rays strike molecules of oxygen, which is  $O_2$ , and cause them to break into two separate oxygen atoms, or  $O$  and  $O$ . An atom of oxygen then combines with a molecule of oxygen and forms ozone which is  $O_3$ . It breaks down again and then recombines again. And so on; unless it is interfered with.

*August 1954*

"It will not take many years to utterly destroy the encircling protective walls which surround this planet and protect the Earth from burning up by the sun's hot rays."

(Walter Russell, Newsletter of the University of Science and Philosophy)

*1957*

Walter Russell publishes his book Atomic Suicide? whose principle message is that the development of the nuclear weaponry and nuclear industry, if it continues, will eventually destroy the planet's oxygen.

"The element of surprise which could delay the discovery of the great danger, and thus allow more plutonium piles to come into existence, is the fact that scientists are looking near the ground for

fallout dangers. The greatest radioactive dangers are accumulating from eight to twelve miles up in the stratosphere. The upper atmosphere is already charged with death-dealing radioactivity, for which it has not yet sent us the bill. It is slowly coming and we will have to pay for it in another century, even if atomic energy plants ceased today." (Atomic Suicide?, p. 18)

Later in the book he predicts that these effects of radiation would not be noticed "until the late seventies".

*1982 and 1984*

Two German reports site that radioactive krypton, which is released in the daily operation of nuclear plants and through the reprocessing of used reactor fuel elements, is affecting the distribution of the electric fields in the atmosphere.

*1984*

A team of British scientists find a ozone hole over the Antarctic larger than the Continental U.S.

*1987*

The ozone hole is twice as large as the U.S. It is discovered that ozone is not diminishing just over the south pole but globally.

*March 1988*

The ozone hole makes headlines.

1987-88

The consensus of opinion says that various man-made chemicals are the sole cause of ozone breakdown; especially compounds of chlorine (CFC's) and bromine (halon fire extinguishers) and a lot of talk about hair spray and refrigerators. A leading authority on the ozone problem, NASA's Dr. Robert Watson admitted many scientists were "baffled" by findings of ozone depletion even in areas where CFC's action was negligible. He called the extent of the hole's growth "absolutely unexpected".

April 6, 1989

"Scientists reported yesterday that for the first time they have detected an increase in "biologically relevant" levels of ultraviolet radiation reaching the ground as a result of the ozone hole over the Antarctica. This is the first indication that the depletion of ozone is beginning to cause the potentially harmful effect that has long been predicted." (*The Washington Post*)

Late 1990

University of California researchers publish their findings that Phytoplankton are reproducing less profusely than before. Observing the plankton in the Belingshausen Sea they found that increased UV appears to be suppressing the Phytoplankton's productivity by 6 to 12%.



*1992*

Both NASA and the World Meteorological Society reported 10 to 25 percent ozone depletion measured over the northern United States, Canada, Europe and the Antarctica (ozone hole being three times the size of the United States).

*1994-95*

Hawaii reached its lowest level of ozone on record. The U.S. National Oceanic and Atmospheric Administration announced a 40% increase in dangerous ultraviolet light on the Big Island.

*March 1996*

The World Meteorological Agency reports "the extremely worrying" development of an unprecedented 45 percent ozone thinning over Greenland, Scandinavia and Western Siberia.

*Summer 1997*

Research from the Antarctic Marine Living Resources program find "krill abundance in the Antarctic Peninsula region is down 60 to 90 percent since the early 1980's".

1994

An article in a German journal *Strahlentelex* (March 3, 1994) explains that the nuclear industry is responsible for the ozone hole. The authors, Giebel and Sternglass explains that radioactive gases like krypton-85 from nuclear plants and from the nuclear fuel recycling plants go up to the stratosphere where they create water droplets from the moisture which in turn form ice crystals on the surface of which the destruction of the ozone by the fluorhydrocarbons is greatly accelerated.

A quote from this article explains:

"The nuclear industry is responsible for the ozone hole. Radioactive gases like Krypton-85 appear in increasing amounts due to the bomb tests, releases and accidents at nuclear reactors and especially from the nuclear fuel recycling plants. Krypton-85 goes up to the stratosphere where it creates ice crystals which catalytically enhance the destruction of ozone by the fluorhydrocarbons."

Note: Krypton-85 has a half-life of 10.7 years and a whole life of 217 years.

"The ozone layer, if it disappears, disappears for all of us." (Isaac Asimov)

## (6) SOLUTIONS

The other side of technology can save us. We could shift from polluting energy sources. All that is required is scientific and financial support for the non-polluting energy waiting in the wings to end our reliance on nuclear energy and oil and coal. Although the price of solar energy has declined over the last few years, how could it be competitive with the enormous monetary support nuclear power has had in the form of subsidies, tax breaks and insurance coverage by the government.

The United States spends nearly \$60 billion a year to defend the \$30 billion of oil we extract in the Persian Gulf area. This price is too high, especially when you factor in the human suffering and expenses from thousands of our Gulf War soldiers brutally sick with Gulf War Syndrome.

Let's use solar panels and electric vehicles to cancel out this dollar extravangaza. Surely \$60 billion could help renewable energies get out to the public. Solar, thermal, photovoltaic, wind, biomass, hydro, earth energy and other benign renewable technologies are ready and waiting. Working models exist which could be refined and rapidly spread around the world at affordable cost. Let technology be put to some use that makes sense!

In searching for new energy sources, some inventors have revealed that space is filled with motion -- the quantum fluctuations within the atom and between the stars -- and that this energy could be converted into electricity. Orthodox scientists have over looked the vacuum of space and that it might be utilized for energy because they have not realized it consists of pure massless charge.

Instead of being blinded by traditional ideas, let us look into the spectrum of energy sources waiting to be harnessed to make usable physical energy.

Once we install clean energies, *radioactive waste* remains a vast challenge. United States' plans to transport radioactive waste in thousands of shipments across the country to Nevada and to deregulate radioactive waste and use it in commercial products do not make sense! There are other possible solutions. One energy technology that might offer hope is transmutation. Traditional science says this is not possible. However, in recent years, experiments by certain labs have been replicated and several patents granted.

Transmutation is, in this application, used to describe the conversion of radioactive elements into other radioactive elements with shorter life spans, or into non-radioactive elements. In some cases the process may change the radioactive element into another element with a shorter half-life, so that the necessary storage time is reduced. In other cases the element itself would be changed.

If all nuclear power production were stopped and scientists switched over to study the clean-up, and the very available renewable energies were brought into place, we might have a chance to save the Earth as a habitat for Life.

Of course, we will have to re-mineralize the soil, quadruple plant life for absorbing CO<sub>2</sub> and making oxygen, and stop using meat as a protein source because it requires the abuse of so much land and water.

Congress of the United States has served the corporate gang since the mid-1970's, has exploited Nature and humans, impoverished the people who are in a state of biological

degeneration, and ruined the land with the huge loss of topsoil, bankrupted the government and allowed the perpetration of radioactive contamination all over the Earth.

If enough people move beyond denial and disinformation, if enough people move beyond rage and resentment, if enough people wake up, unite and take action -- then we can affect changes.

Claim your right to clean water and air and food. Our future is a matter of choice. We each have a role to play.

TECHNOLOGY'S CURSE Diet for the Atomic Age by Sara Shannon, the definitive book on radiation protection, 355 pages with 18 pages of references, is available from [www.Earthpulse.com](http://www.Earthpulse.com) or telephone 888 690-1277.

# From the Archives

March 14, 1955

Mr. Roger W. Babson  
Mountain Lake  
Lake Wales, Florida

Dear Mr. Babson:

Re: Sarah Weld Blake

We were delighted to receive your questioning letter of the 7th Inst., in reference to the published letter of our most treasured friend and student, Sarah Weld Blake, and to have the opportunity of meeting the challenge of a man of your mental calibre. If the whole world of thinking men would more deeply challenge my knowledge, even to rising up in all their wrath, I would at least be given the opportunity of voicing that knowledge. We are the more delighted that it should be you who have challenged us, than many others, for we have much in common. Your works indicate that -- especially when you ask "What about God?" Our Foundation exists solely for the purpose of unifying mankind through havin. a dynamic knowledge of God -- not a metaphysical abstract God -- but One who can be scientifically proved in the laboratory.

It is through ignorance of God and His ways that this dreadful barbarian world exists. Our work is to prove God to man and demonstrate that he has been working against God for thousands of years. That is why civilizations periodically fall as this one is again falling. I am answering your letter at length for that reason.

All down the ages any man who is too far ahead of his time has been crucified. That you know. My knowledge has been received with ridicule by science because it does not conform with tradition.

I have warned the President that radioactivity must not be used for industry. His atomic scientists would not let him even listen to my reasons. The tragedy of that situation lies in the fact that the atomic scientists are using a force without knowing its cause. I know its dreadful cause for I first gave knowledge of the existence of plutonium, neptunium and the other four transuranium elements, to the world in 1926. I also gave deuterium and tritium to the world at the same time, in two periodic tables which I enclose for your reference.

Naturally the changed names were not my copyrighted ones, for when they were finally isolated, first in 1929 which gave heavy water to the world and made the H bomb possible, then in

1939 -- to make the Hiroshima bomb, those who isolated them changed their names, even though all of them had had my charts, which I sent to the whole scientific world in 1926. I am in the position of the geologist who located a well but the neighbors gave credit to the well diggers, instead of the geologist.

It is because of my knowledge, Mr. Babson, that we are concerned, for I know that any form of vegetable and animal life cannot exist on this planet if the plans for using radioactivity for industry are carried out -- for radioactivity destroys oxygen!

Unfortunately for the human race Science denies this fact of Nature. It claims that the elements cannot be destroyed. This lack of knowledge regarding the structure of matter can cost the planet its last grass blade.

Chemistry is only in its infancy as yet. Radioactivity has been discovered without knowing that it is the death-principle which makes bodies disintegrate and decay! God divides all of His effects into equal opposites -- male and female -- compression and expansion-- radioactivity and its opposite mate GENEROACTIVITY, which is unknown and undiscovered, either chemically or electrically. Generoactivity is the life-principle which makes bodies integrate and grow.

This letter would need too many pages to cover this principle, even briefly -- but I can give you enough to set you thinking along Nature's lines by the following:

When you breathe in oxygen you are taking into your body a life-giving, generoactive gas. It is helping in the building of a generoactive, living body. The chemistry of your living body is such that its emanations are not a menace to human life. Thousands of living generoactive humans can live together as long as they have plenty of oxygen to keep them in a generoactive condition.

Now for the other side of the picture!

When you breathe out you emanate a deadly poisonous radioactive gas, carbon dioxide, instead of life-giving oxygen. Your body transforms the oxygen into carbon dioxide. Millions of dead particles are leaving your body with every outgoing breath, while millions of new living particles are being added with each incoming breath. So long as this process continues, human bodies are no menace to each other. The moment that generoactive oxygen ceases to counteract its radioactive poisons, the human body is then a menace to all humans until put under the ground to be transformed from deadly carbon dioxide into life-giving generoactive oxygen. This is the electro-chemical cycle of living-dying bodies which Nature repeats endlessly.

You well know that if we allowed our thousands of dead human bodies to stay above ground, human life would be impossible when the dead bodies out-balanced the oxygen output from the earth. You may

not realize it but the radioactivity of dead human bodies is the same in principle as radioactive fission. The radioactivity of the transuranium elements is millions of times more powerful than decaying organic flesh, but, likewise, it is many times more deadly.

When industry has 50,000 atomic locomotives, and a corresponding number of all other machines, ships and planes insulated by tons of steel shields, I foresee, with dread, the gradual transformation of those shields, into Franksteins, from which there can be no escape. It would be impossible to burn them, or bury them, or throw them into the sea to escape their effects. And that will as surely happen as day follows night.

It is too bad that the investigation, which is being demanded, must have only the traditional scientists at its head. Limited by their traditional theories, and not knowing CAUSE, they would not know where to look.

I believe that the first Hiroshima bomb will continue its destructive effects for five hundred to a thousand years, and all succeeding radioactive explosions will multiply and accumulate until the gradual disappearance of forests and other vegetation will deprive the atmosphere of its generoactive oxygen.

Now to answering your questions:

I have been seriously concerned about the raising of the ocean level ever since there seemed a possibility of continuance of atom bomb usage. Knowing what its multiplication will do, owing to Heaviside layer disturbance, I look for four inevitable effects.

1 - Increased number of hurricanes farther north in their extension, due to increased earth pressures by contraction, to balance surface expansion.

2 - Increased volcanic disturbances. The hurricanes have come and the volcanic eruptions are beginning -- and will increase, all over the world if atomic power is used for industry. Maine, Nova Scotia and the Great Lakes district, will soon be torn by hurricanes if more bombs are exploded.

3 - Rising of the ocean surface from two causes, (a) from melting ice caps and glaciers, and (b) from rising temperature of the planet. The earth's temperature has very appreciably increased - Dr. Huntington of Yale states that "the raising of the earth's temperature to even a few degrees would have a disastrous effect upon human existence." Even one degree would expand the volume of water in the ocean very much. Just how much I have no accurate way of computing, but one foot (which is .0005) would be more than a safe figure. The melting of the ice caps and glaciers would add much more, and that has been computed and announced from time to time.

The Port Authority of New York has several times called attention to the rise in New York Harbor. The New York press has printed a number of stories about the threat of rising water in Manhattan. If my memory serves me right I think the tides are two



feet above the mark of ten years ago. It is reported that the rising waters of the Great Lakes has already cost over one billion dollars. The Scientific American has printed several stories based upon investigations made by alarmed sources. Our Government has initiated an investigation in the Antarctic regarding planetary weather and water changes which have taken place recently.

Fishing industries in many nations have had to build newer boats to go farther north for fish they used to get offshore. That is sufficient proof that waters are warming, and it necessarily follows, as a matter of physics, that ocean volumes are increasing.

Further proof that earth's temperature is rising is evidenced by the fact that ships can sail freely where icebreakers were needed ten years ago, and thousands of miles of perpetually frozen tundra yield green vegetable crops today.

4 - Disturbance of Heaviside layers. This is the most serious cause of damage to the planet. It is useless for scientists to scour the earth with Geiger counters and give it a clean bill of health while overlooking the damage to these insulating pressure walls, which surround the earth. This disturbance is the main cause in temperature increase and its continuance of damage to them could render the planet uninhabitable below the 50th parallel, in one generation, and the entire planet eventually.

An explosion of dynamite in a building would blow its walls outward and destroy the building. It is generally supposed that the same explosion, out in the open, would do no damage, for supposedly there are no walls to blow out. It has walls, however, and a sufficiently large explosion, like an H bomb, blows them out irreparably. Part of their volume is lost and their density thinned. This permits a greater amount of sunlight to penetrate to the planet, which raises its temperature. The extra radiation of the earth's surface cools and contracts its core. The contraction must have its way of escape, so living volcanoes will soon begin to erupt all over the planet.

The Heaviside layers are not spherical envelopes, they are cones. Their bases meet at the earth's equatorial plane and the apices spiral directly into the earth's two poles. Increasing damage to the Heaviside layers, north of the equator, will accelerate the melting of our north polar ice.

An all-out atomic war, or atomic fission for industry, would naturally be concentrated in the Northern Hemisphere. This would, in a very short time, cause a serious tilting of the planet and a consequent tremendous readjustment of its temperature cycles and seasons.

Science has never realized what a regulating effect these four vortical layers have upon the normalcy of the earth's temperatures. Neither does it suspect the gyroscopic control they have over the earth's rotation upon its axis. It does not, in any way, connect these Heaviside layers with the regulating forest lines of Oak and birch, or the fact that wheat can now grow as far north as 58 degrees, or

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That tuna fish are now caught north of Columbia River.

There is a direct connection however, which will effect world-economy as well as human destiny. It is a great pity that mankind must pay so dearly for what a little knowledge of God's ways and processes, in putting His universe together, would avoid.

If we could but arouse one thinking person to the danger that lies ahead, who could bring about an open-minded hearing of what radioactivity really is we could save our planet.

My wife, who is one with me in our work for humanity, joins me in extending our thanks and our sincere regards.

P. S. We are enclosing marked copies of our 1954 announcements in order that you may have the full text from which Mrs. Blake made her quotations. The romance of Seannasca tells more of our background and purpose.

(11) This question has been answered in relation to the wiring information requested on the drawing which only a skilled electric engineer could answer.

(12) This question was answered as question #11 has been answered, but the thing to remember is there must be either a metal connection made by means of roller bearings with the #4 core, or with the coil itself by means of a brush.

(13) The wheel is designed to turn at enough revolutions per minute to send off the desired current. To do that, sufficient steam power must be generated to reach that speed before the current will be strong, and that is determined by the amount of heat needed in the armature to keep a continuous head of steam which will keep that wheel continually turning at the same rate of speed. Naturally the current cannot be transmitted until it has reached that speed.

### CONCLUSION

I wish I could gradually instil into the minds of science that light is the only source of power and that no multiplication of power can come from light until it is curved. A reflecting mirror for example will not multiply power, for its rays - both received and reflected - are parallel. A curved mirror, however, whether convex or concave, will multiply or divide light in accordance with the nature of its curvature. All you have to do is to look out into space surrounding you to see that we are living in a curved universe and that all light arriving on this planet from the sun is penetrating a series of curves of which we are on the concave side, and space is on the convex side.

The study of light is an optical principle and all power multiplication or division is therefore optical. The more you can understand Nature's process of growth through her photosynthetic optical power multiplication principle, the farther ahead of present scientific standards you and your wonderful group may place yourselves. I would love, therefore, to have the opportunity, if we ever do get our needed laboratory and staff, to gradually help them to acquire this knowledge.

Let us know if there are any further questions and in the meantime we send you our gratitude for your understanding. We ever feel God's guiding hand.

Sincerely yours,



Walter Russell

WR:ds

P.S. We are enclosing extra copies for General Chapman, Major Sargent and Major Cripe to refer to at their leisure. As the drawing is made on tracing paper, it also can be duplicated by blueprint.

WTR

SUPPLEMENT

Just as we are about to mail this letter, your latest Defense News arrived and I read with great interest the possibility of "Nike Zeus" getting into production. If, Henry, your group can give me sufficient respectability to be listened to by conventional science by proving this first example of power-projection, I believe I could contribute very largely toward the improvement of the "Nike Zeus," by unfolding these secrets in relation to the electron. It is upon knowledge of the relation of the electron to the cathode rays and to the inert gases that the goal we are seeking of power-projection is based. That mystery of the relation of the inert gases and the cathode rays to the birth and fulfillment of matter is a closed door to science and in that knowledge lies a vast power for the improvement of all electronic and radar technology.

It is difficult to explain what I mean in this short letter, but I could give you a simple example. The inert gases control both the power and the pattern of all things which grow from the seed. If I could explain to them, therefore, why certain inert gases and electron relationships would produce a tree of soft wood and other relationships extremely hard wood, or that same relationship will produce soft flesh in a human body and dense bones, they could apply that knowledge to the control of the electron and radar systems which makes the "Nike Zeus" possible.

To be able to give this contribution, however, I must first gain the right to be listened to by proving to conventional science that there is much beyond their cosmogony that they do not yet know and it is only through what your group may now do with the enclosed model that this could be accomplished.

A handwritten signature in cursive script, reading "Walter Russell". The signature is written in dark ink and is underlined with a single horizontal line. Below the underline, there is a small vertical tick mark.

This letter by Dr. Russell summarizes well what we can expect from Radioactivity and how most folks greeted this news about it almost 50 years ago. Now we can expect to have much better success in getting world leaders to listen and to act because what he predicted has largely come to pass and/or is obviously in the making. In addition we now have proof of principle of a technological fix - still a gargantuan work, but none the less a fix - that should make it psychologically easier for our leaders to consider the dire straits we have placed ourselves in by using radioactivity for power production and for war.

FIG. 1

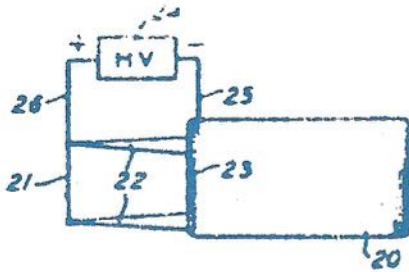


FIG. 2

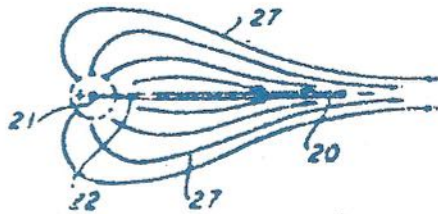


FIG. 3

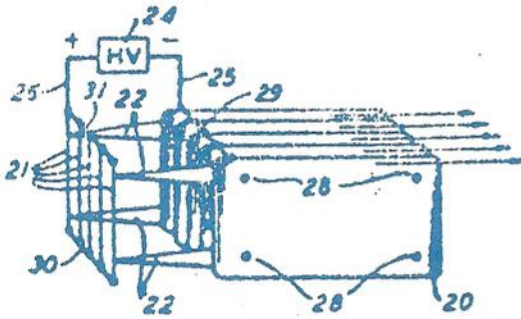


FIG. 4

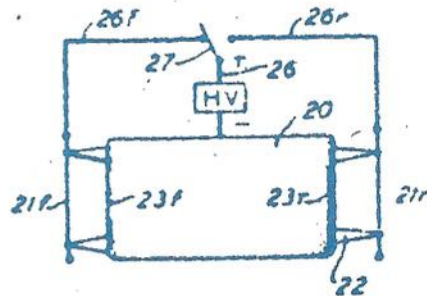
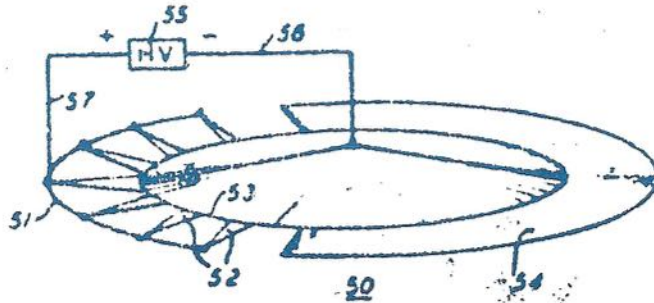


FIG. 5



INVENTOR  
THOMAS TOWNSEND BROWN

*Walter Cole Skindler & McArthur*

ATTORNEYS

ELECTROKINETIC APPARATUS

Filed July 3, 1957

2 Sheets-Sheet 2

FIG. 6

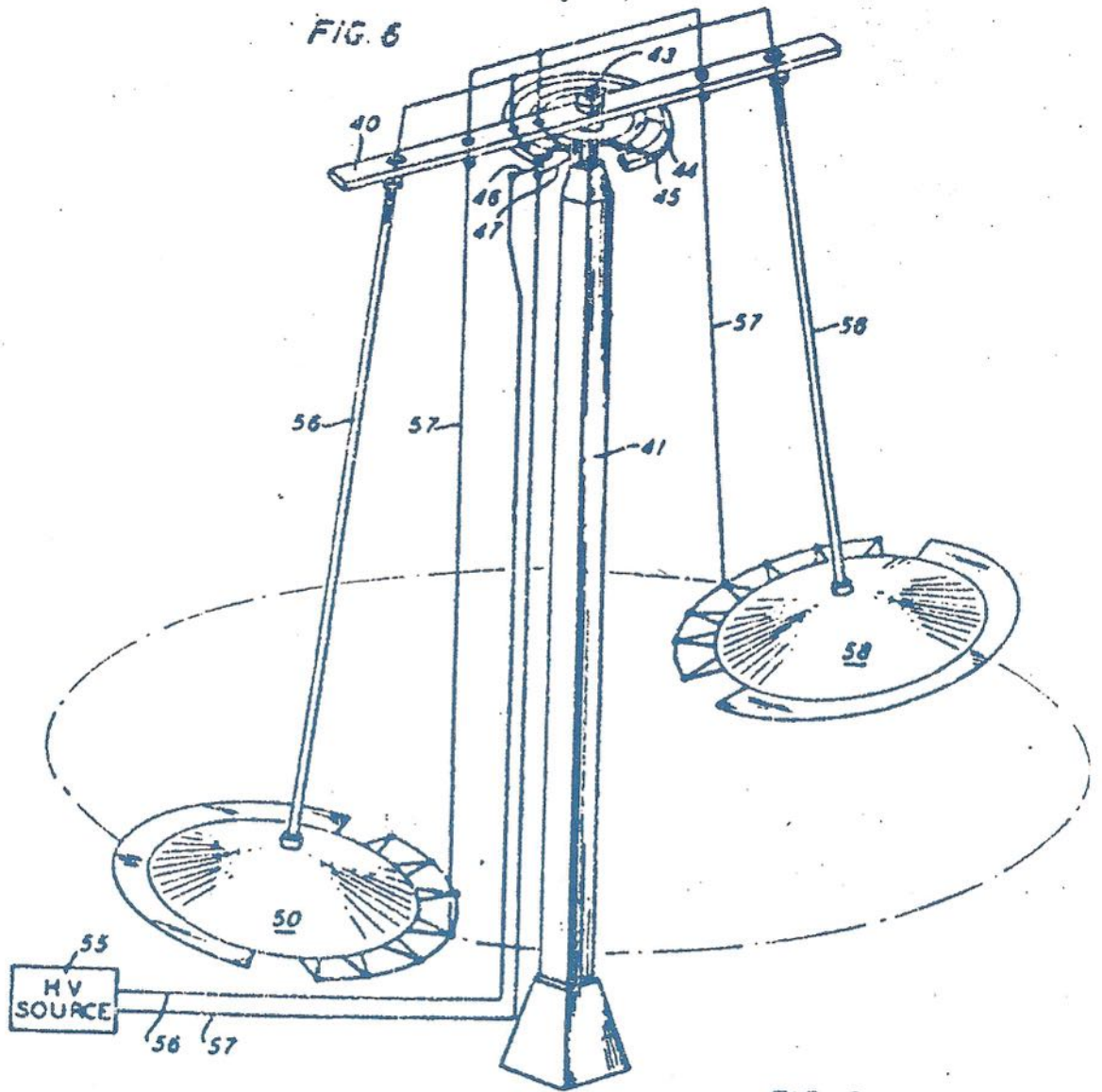


FIG. 7

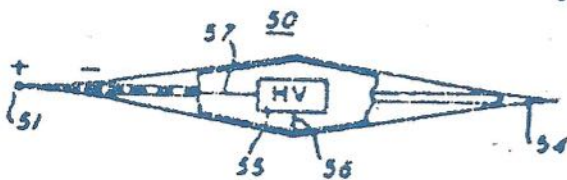
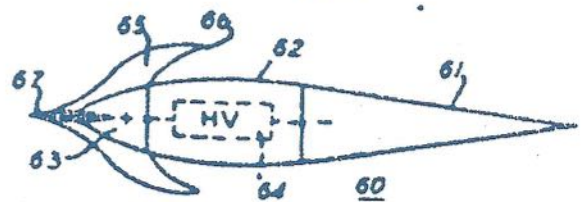


FIG. 8



INVENTOR  
THOMAS TOWNSEND BROWN  
BY

Patson, Cole, Hendler & Peterson  
ATTORNEYS

2,949,556

## ELECTROKINETIC APPARATUS

Thomas Townsend Brown, Umatilla, Fla., assignor to Whitehall-Rand, Inc., Washington, D.C., a corporation of Delaware

Filed July 3, 1957, Ser. No. 669,830

12 Claims. (Cl. 310-5)

My invention relates to electrokinetic apparatus, and more particularly to a method and apparatus for utilizing electrical potentials for the production of forces for the purpose of causing relative motion between a structure and the surrounding medium.

This invention was disclosed and described in my application Serial No. 293,465, filed June 13, 1952, which application has become abandoned. However, reference may be made to this application for the purpose of completing the disclosure set forth below.

The invention utilizes a heretofore unknown electrokinetic phenomenon which I have discovered; namely, that when a pair of electrodes of appropriate form are held in a certain fixed spaced relation to each other and immersed in a dielectric medium and then oppositely charged to an appropriate degree, a force is produced tending to move the pair of electrodes through the medium. The invention is concerned primarily with certain apparatus for utilizing such phenomenon in various manners to be described.

Priorly, intervening electrokinetic apparatus has been employed to convert electrical energy to mechanical energy and then to convert the mechanical energy to the required force. Except for the insignificantly small forces of electrostatic attraction and repulsion, electrical energy has not been used for the direct production of force and motion.

Since any conversion of energy from one form to another is accompanied by losses due to friction, radiation or conduction of heat, hysteresis, and the like, as well as serious reductions in the availability of the energy by increases in the entropy of the system, it is apparent that great increases in efficiency may be achieved through the use of the direct production of electrical energy and force and motion made possible by my invention. Likewise, the elimination of the machinery for the intermediate conversions results in great savings in first costs, maintenance, weight and space, the latter two being of great importance in self-propelled vehicles including mobile vehicles such as aircraft and space craft.

It is therefore an object of my invention to provide an apparatus for converting the energy of an electrical potential directly into a mechanical force suitable for causing relative motion between a structure and the surrounding medium.

It is another object of this invention to provide a novel apparatus for converting an electrical potential directly to usable kinetic energy.

It is another object of this invention to provide a novel apparatus for converting electrostatic energy directly into kinetic energy.

It is another object of this invention to provide a vehicle motivated by electrostatic energy without the use of moving parts.

It is still another object of this invention to provide a self-propelled vehicle without moving parts.

It is a feature of my invention to provide an apparatus

for producing relative motion between a structure and the surrounding medium which apparatus includes a pair of electrodes of appropriate form held in fixed spaced relation to each other and immersed in a dielectric medium and oppositely charged.

It is another feature of my invention to provide apparatus which includes a body defining one electrode, another separate electrode supported in fixed spaced relation by said body, and a source of high electrical potential connected between the body and the separate electrode.

It is also a feature of my invention to provide apparatus having a body which is hollow and a source of potential contained within the body.

It is another feature of my invention to provide apparatus having a body and an electrode connected to the body, which combination comprises a vehicle.

It is also a feature of my invention to provide apparatus which comprises a plurality of assemblies, each including a body and an electrode secured in side-by-side spaced relation to each other.

It is another feature of my invention to provide vehicular apparatus which includes a pair of electrically conductive body portions joined by an insulating portion, whereby said electrically conductive portions constitute the electrodes.

Other objects and advantages of my invention will be apparent from a consideration of the following specification, read in connection with the accompanying drawings, wherein:

Figure 1 is a side elevational view illustrating diagrammatically a simple form of apparatus embodying and functioning in accordance with the principles of my invention;

Figure 2 is a plan view of the apparatus shown in Figure 1;

Figure 3 is a perspective view illustrating the manner in which a plurality of devices of the character illustrated in Figure 1 may be interconnected for joint operation;

Figure 4 is a diagrammatic view similar to Figure 1 illustrating a modified form of the invention providing a means for reversing the direction of the propulsive force produced;

Figure 5 is a perspective view illustrating diagrammatically a self-propelled device utilizing the principles of this invention;

Figure 6 is a perspective view of one illustrative embodiment of this invention showing a pair of electrokinetic propulsion devices suspended from a rotatable arm which arm is supported at its midpoint;

Figure 7 is a side elevational view of a mobile vehicle with parts broken away to show the interior construction;

Figure 8 is a side elevational view illustrating diagrammatically the arrangement of parts used in an alternative form of mobile vehicle.

Referring to the drawings, I have illustrated in Figure 1 a simple form of apparatus which is readily adaptable for use in demonstrating the principles of my invention, and which is utilized in this application as a simplified representation to facilitate an understanding of the principles involved. The apparatus illustrated in Figure 1 constitutes one electrode which is preferably in the form of a body member 20, said member preferably comprising a relatively thin flat plate. A second electrode 21 in the form of a wire or other suitable form of electrical conductor is held as by means of insulated supports 22 in fixed spaced relation to the body 20, the wire 21 being disposed in the plane of the body 20 and preferably substantially parallel with a leading edge 23 of the body 20. A source 24 of high voltage electrical potential is provided and connected as shown at 25 and 26 to the two electrodes 20 and 21, respectively.

of suitable rotatable contacts 44 and 45 and brushes 46 and 47 adjacent point 43 in the center of arm 40. Mobile vehicle 50 is shown suspended from one end of the lever arm 40 by means of conductors 56 and 57. A similar vehicle 58 is shown suspended from the other end of the rotatable arm by conductors 56 and 57. It is, of course, understood that these bodies may be suspended by any convenient structure such as wires or rods which wires or rods may support conductors 56 and 57 in any suitable manner.

In this illustrative embodiment the vehicles were caused to rotate at a speed of 17 feet per second with 50 kv. applied to conductors 56 and 57 from source 55. It is, of course, understood that these figures are merely by way of illustrative example and, as might be expected, the speed of the vehicles increases exponentially with the applied voltage.

When the apparatus is to be used for propelling a mobile vehicle, it is, of course, necessary that the source 55 of high voltage be contained within and carried by the vehicle. This may be accomplished by using the apparatus in the manner shown in Figure 7, wherein the high voltage source 55 is contained within the hollow central portion of the body 50, the conductor 56 being connected to the body and the conductor 57 being suitably insulated from the body 50 and extended externally thereof and into connection with the leading conductor 51.

The apparatus of my invention may be used to propel vehicles of shapes other than that described in connection with Figures 5 and 7. For example, in Figure 8 I have illustrated the way in which the invention may be utilized in the propulsion of a vehicle of torpedo-like shape. As is shown in Figure 8, I use a body member which is indicated generally by the reference character 60 and which is formed of three parts, to wit, an afterbody 61 formed of electrically conductive material, a hollow central body portion 62 formed of insulating material, and a nose portion 63 formed of electrically conductive material. A source 64 of high voltage electrical potential is contained within the hollow central body portion 62 and has its terminals connected, respectively, to the nose portion 63 and afterbody portion 61, the positive terminal being preferably the one which is connected to the nose portion 63. Thus, the afterbody 61 functions as the aft electrode 20 described with reference to Figure 1 and the nose portion 63 corresponds to the leading electrode 21.

The nose portion 63 may be equipped with a plurality of suitably shaped fins 65. These fins may be extended aft of the junction between the central body 62 and the nose portion 63, as shown at 66, to provide ionizing elements which are spaced more closely to the afterbody 61 and which function in a manner analogous to the smaller diameter electrode 21. Also, the fins may be shaped to conform to the aerodynamic requirements and may, if desired, be movable in whole or in part for the purpose of permitting the machine to be maneuvered.

I have shown the nose portion 63 as being provided with a needle-like point 67. By using such a nose form, which at present appears to be the best suited for flying speeds approaching or exceeding the speed of sound, I am able to produce an ionization of the atmosphere in the immediate region of this foremost portion of the mobile vehicle. I believe that this ionization facilitates piercing the sonic barrier and minimizes the abruptness with which the transition takes place in passing from subsonic velocities to supersonic velocities.

From the foregoing it will be observed that I have provided an electrokinetic method and apparatus for the production of forces suitable for causing relative motion between a structure and the surrounding medium. It will be observed that the methods and apparatus described herein are particularly adaptable for use as a propulsive means for self-propelled vehicles. I wish to emphasize that the high voltage power source referred to

is of very low capacity. For example, potentials of the order of 30 to 70 thousand volts may be adequate for use with this apparatus, the particular voltage employed dependent, of course, upon the size of the vehicle or apparatus. It will be appreciated that the elimination of moving parts in the apparatus will represent a tremendous saving in first cost and maintenance cost of the apparatus also the direct production of the motive forces from the electrical force represents a high efficiency so that greater propulsive forces and speeds may be obtained with apparatus occupying small space and of light weight.

While I have shown and described various embodiments of my invention, it is appreciated that the principles thereof may be extended to many and varied types of machines and apparatus. The invention therefore is not to be limited to the details illustrated and described herein.

Certain of the physical principles embodied herein are disclosed and described in my application Serial No. 669,727, filed July 3, 1957, which is directed to the generation of high voltages by means of electrokinetic apparatus.

In my application Serial No. 669,831, filed July 3, 1957, electrokinetic principles are employed in conjunction with apparatus somewhat similar to that disclosed and described in the instant application to produce a novel transducer.

I claim:

1. Thrust producing apparatus comprising an electroconductive body having a relatively large, substantially smooth area thereof exposed to the surrounding medium, an electrode supported on said body, insulated therefrom and shaped to produce a concentrated electrostatic field when electrically charged with respect to said body, and power means connected between said body and electrode to impress high voltage thereon whereby to cause relative movement of an ionizable dielectric medium surrounding said electrodes.

2. Thrust producing apparatus comprising an electrode having a substantially flat exposed surface, an elongated electrode extending along one edge of said surface and equidistant therefrom and supported in fixed spaced relationship with respect to said edge of said surface and substantially in the plane thereof, and power means connected across said electrodes to impress high voltage thereon whereby to cause relative movement of an ionizable dielectric medium surrounding said electrodes.

3. Thrust producing apparatus comprising a substantially flat hollow electrode, an electrode supported in fixed spaced relationship with respect to an edge of said flat electrode and substantially in the plane thereof, and power means within said hollow electrode connected across said electrodes to impress high voltage thereon thereby causing relative movement of an ionizable dielectric medium surrounding said electrodes.

4. Thrust producing apparatus comprising a substantially flat electrode having a pair of electrodes supported in fixed spaced relationship with opposite edges of said flat electrode and substantially in the plane thereof, a high voltage source with one terminal connected to said flat electrode and switching means connected to the other terminal of said source, and adapted to connect said other terminal selectively to one or the other of said electrodes whereby to cause relative movement of an ionizable medium surrounding said electrodes selectively in one direction or the other depending on which of said electrodes is connected to said source.

5. Thrust producing apparatus comprising a group of flat electrodes each having a continuous edge, said flat electrodes being supported in spaced parallel relation and electrically interconnected, a group of elongated electrodes, each supported in fixed spaced relationship with respect to one of said edges, said electrodes being electrically interconnected and a high voltage source non-



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ected across said groups of electrodes whereby to cause relative movement of an ionizable dielectric medium surrounding said electrodes.

6. Thrust producing apparatus comprising a disc-shaped electrode, an electrode arranged in an arc of less than 180° spaced from an edge of said disc electrode and substantially in the plane thereof and power means connected across said electrodes to impress a high voltage potential thereon whereby to cause relative movement of an ionizable dielectric medium surrounding said electrodes.

7. Apparatus for producing relative motion between a vehicle body and the surrounding medium comprising a vehicle body having a conducting nose portion, a central portion and a conducting afterbody having a relatively large surface area and a source of high voltage connected between said conducting nose portion and said conducting afterbody whereby the application of said voltage to said conducting nose portion and said conducting afterbody cause relative motion between said body and the surrounding medium.

8. Apparatus for producing relative motion between a body and the surrounding medium comprising a body portion, an elongated electrode mounted on and insulated from said body portion and a source of potential having its positive terminal connected to said electrode and its negative terminal connected to said body portion whereby said electrical potential is converted directly into a motive force.

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9. Apparatus for producing relative motion between a body and the surrounding medium in accordance with claim 8 wherein said body portion includes an electrical conducting surface and wherein said electrode is mounted in fixed spatial relation to said body.

10. Apparatus for producing relative motion between a body and the surrounding medium in accordance with claim 8 further comprising a rotatable arm, said body being connected to said rotatable arm.

11. Apparatus for producing relative motion between a first and a second body and the surrounding medium comprising a first conductive body portion, a second conductive body portion, each of said body portions having a relatively large surface area and having an elongated electrode mounted thereon in fixed spatial relationship, a source of potential connected to each of said bodies and each of said electrodes and means for supporting said bodies in rotatable relationship.

12. Apparatus for producing relative motion in accordance with claim 11 wherein said supporting means comprises an arm, and a support for said arm, said first and said second bodies being connected to the ends of said arm.

References Cited in the file of this patent

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1,974,483 Brown ..... Sept. 25, 1934

Feb. 20, 1962

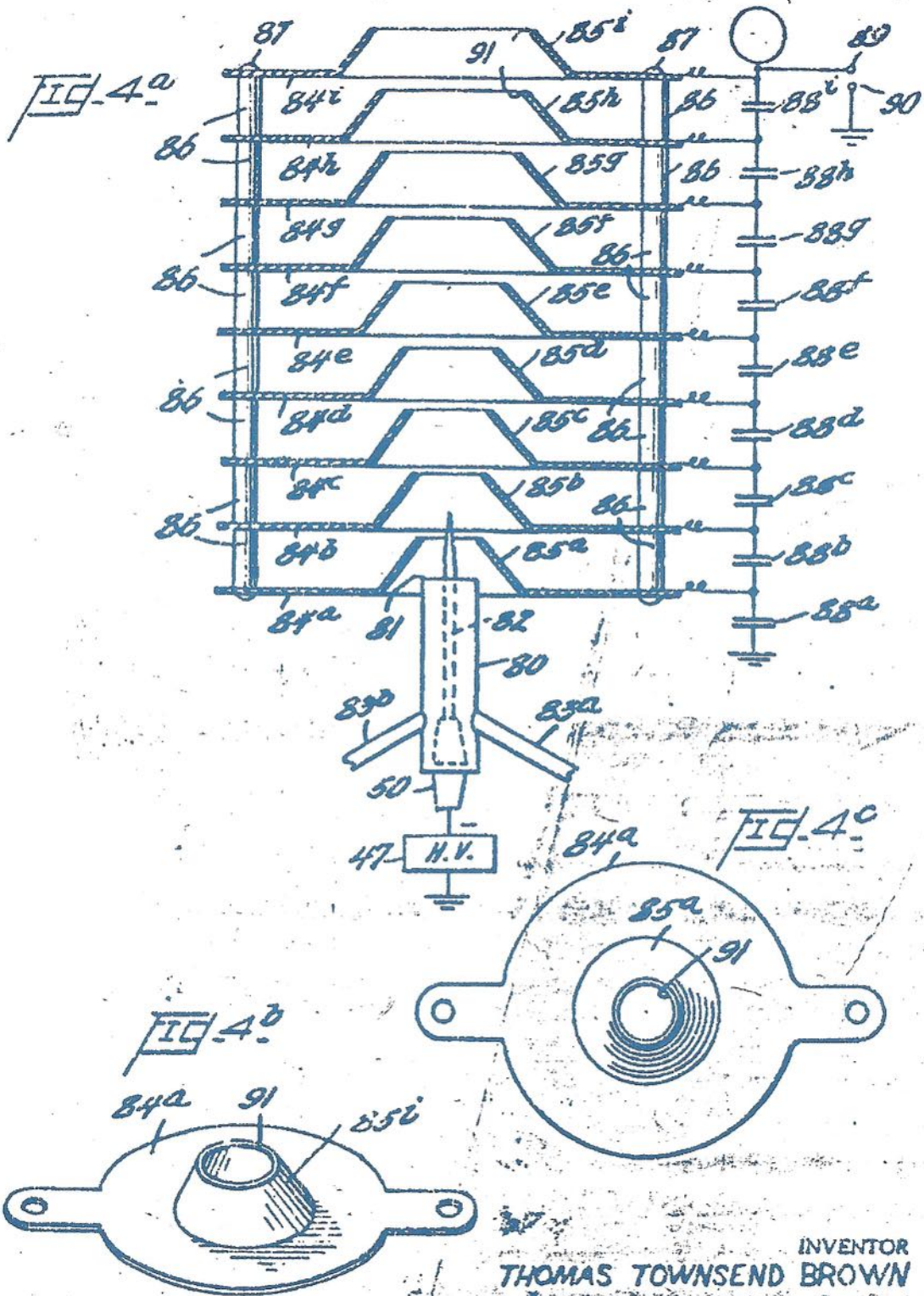
T. T. BROWN

3,022,430

ELECTROKINETIC GENERATOR

Filed July 3, 1957

2 Sheets-Sheet 2



INVENTOR  
THOMAS TOWNSEND BROWN

BY *Nation, Cole, Kinicki & Nation*  
ATTORNEYS

Feb. 20, 1962

T. T. BROWN  
ELECTROKINETIC GENERATOR

3,022,430

Filed July 3, 1957

2 Sheets-Sheet 1

FIG. 1

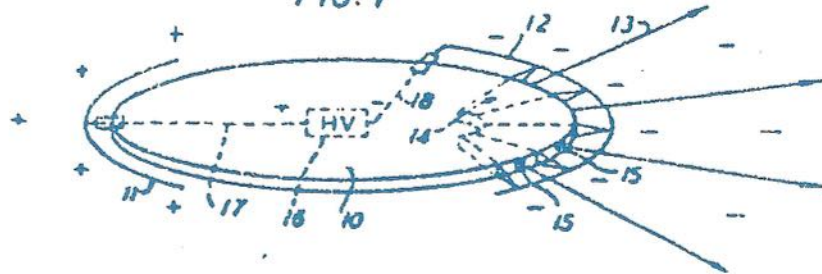


FIG. 2

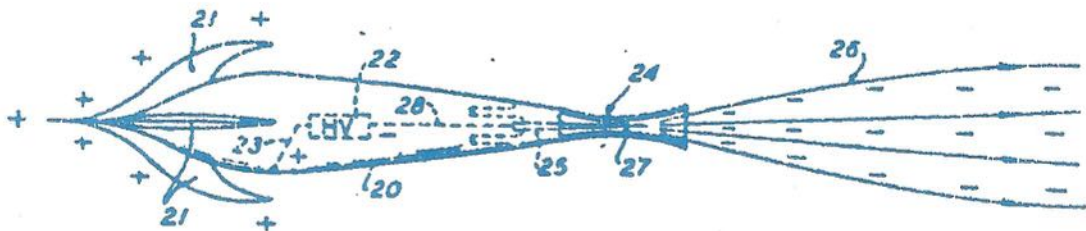
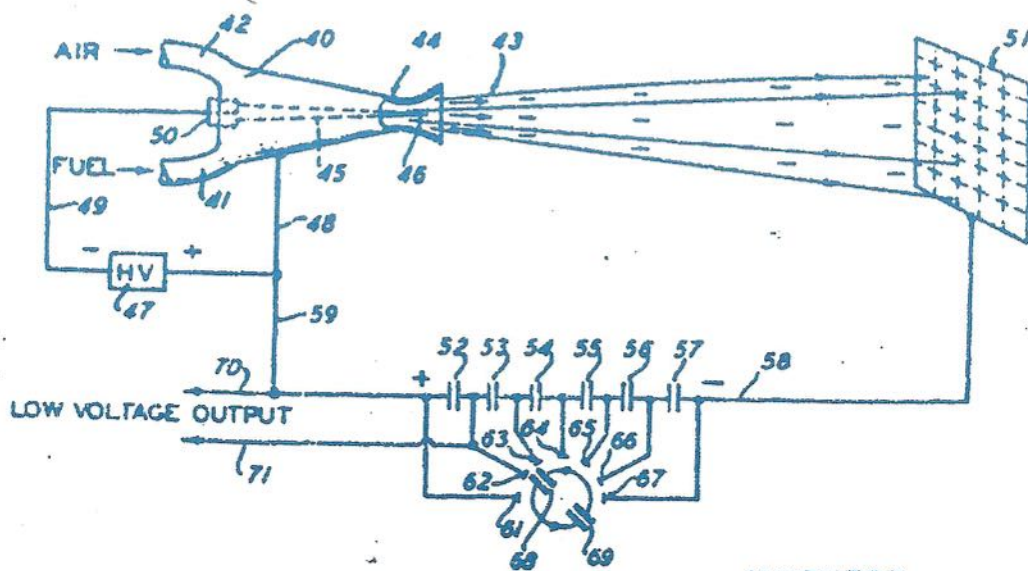


FIG. 3



INVENTOR  
THOMAS TOWNSEND BROWN  
BY

*Staten, Cole, Glindler & Staton*  
ATTORNEYS

3,922,433

## ELECTROKINETIC GENERATOR

Thomas Townsend Brown, Umatilla, Fla., assignor to  
Whitehall-Rand, Inc., Washington, D.C., a corporation  
of Delaware

Filed July 3, 1957, Ser. No. 669,727

18 Claims. (Cl. 310-5)

My invention relates to electrokinetic methods and apparatus, more particularly to electrokinetic apparatus, for generating and utilizing electrical potentials.

Priorly, the thermal energy of burning fuel has been first converted into mechanical energy of motion which in turn was used to generate electrical energy, the well-known boiler-steam-turbine electrical generator arrangement being a familiar example. However, in accordance with this invention the energy of a burning fuel is directly converted into electrical energy. In accordance with other aspects of this invention, the kinetic energy of a stream of dielectric fluid such as carbon dioxide may be converted directly into electrical energy. Further, the principles of this invention may be applied to apparatus for the generation of very high voltages by a series of conversion devices. Still further, the electrical energy so generated may be employed as a motive force to propel the generator relative to the surrounding medium.

Accordingly, it is an object of this invention to provide a method and apparatus for directly converting the kinetic energy of a fluid stream to an electrical potential.

It is another object of this invention to provide a method and apparatus for directly converting the kinetic and thermal energy of a burning fuel into electrical energy.

It is a further object of this invention to provide a method and apparatus wherein a fluid stream is utilized to transport electrical charges from one electrode to another.

It is a feature of this invention to provide apparatus for generating high voltages which includes a body, a jet or fluid stream source connected to the body, an electrode connected to the body and a source of voltage connected to the electrode for delivering electrical charges to the jet.

It is another feature of this invention to position a jet or fluid stream source within a body, to mount an electrode on the body in the path of the stream and to connect a source of high voltage between the body and the electrode to thus provide a self-propelled vehicle.

It is another feature of this invention to provide apparatus for generating high voltages which includes a body, an electrode mounted on one edge of the body and another electrode mounted on the other edge of the body, to connect a source of high voltage between the electrodes and to position a fluid stream source to direct a fluid stream over one of the electrodes.

It is another feature of this invention to provide a self-propelled vehicle which vehicle includes a body, two electrodes mounted on the periphery of the body, a source of high voltage connected between the electrodes, and a flame jet source connected to the body to direct a flame jet over one of the electrodes.

It is a further feature of this invention to provide a high voltage generator which includes a body and an electrode positioned axially within the body, the body having an orifice or nozzle axially aligned with the electrode, a source of high voltage connected between the body and the electrode and a jet source to direct a fluid stream axially of the body.

It is a further feature of this invention to provide apparatus for developing and converting a high direct current voltage to a low direct current voltage which apparatus includes a body having a nozzle, an electrode positioned substantially axially of the nozzle, a jet source directing a fluid stream along the nozzle, a high voltage

source connected between the body and the electrode, a collector screen positioned in the path of the nozzle for collecting the charged particles delivered by the fluid stream from the electrode and a circuit connected between the collector screen and the body for converting the high direct current voltage developed between the screen and the body to a low direct current voltage.

It is a further feature of this invention to connect a converting circuit between a jet generator and a collector screen to convert the high voltage developed between the generator and the screen to a low direct current voltage which circuit includes a group of serially connected capacitors and a commutating capacitor adapted to be sequentially connected to the serially connected capacitors to cause a low voltage high amperage output to be delivered across one of the serially connected capacitors.

It is still another feature of this invention to provide a high voltage direct current generator which includes a jet source, a body having a nozzle and connected to the jet source and an electrode positioned axially of the nozzle, a source of high voltage connected between the electrode and a source of reference potential and a series of plates each having orifices positioned in the path of the jet issuing from the nozzle, each of the plates being connected to one of a group of serially connected capacitors, one end of the group of capacitors being connected to a source of reference potential.

It is a still further feature of this invention to provide high voltage direct current generators which include a body having a nozzle, a fluid stream source connected to the body and directing a fluid stream along the nozzle, an electrode positioned axially of the nozzle, a source of high voltage connected between the electrode and a source of reference potential, a series of conically shaped plates positioned in the path of the stream and connected to a circuit for delivering a high direct current voltage.

Other objects and advantage of my invention will be apparent from a consideration of the following specification, read in connection with the accompanying drawings wherein:

FIGURE 1 is a perspective diagrammatic view illustrating the general form and construction of a mobile vehicle utilizing flame jets as a means for transporting electrical charges away from the body of the machine;

FIGURE 2 is a side elevational view of a mobile vehicle utilizing a flame jet as a means for transporting electrical charges away from the body of the machine, part of body 20 being broken away to show the details of the interior construction; and

FIGURE 3 is a diagrammatic representation illustrating apparatus for the direct conversion of the energy of a burning fuel into electrical energy.

FIGURES 4a, 4b and 4c disclose another illustrative embodiment of a high voltage generator in accordance with this invention.

FIGURE 1 shows how the principles of this invention may be utilized in a mobile vehicle wherein flame jets are employed to generate the electrical potentials of extremely high magnitude, thus providing an extremely large propulsive force. The machine shown in FIGURE 1 comprises a hollow disc-like body 10 on which is insulatably mounted a leading edge electrode 11 electro-conductive to form in effect a body electrode. From the rear edge of the body 10 is supported an insulated, trailing edge electrode 12. It will be understood that there is mounted within the hollow body 10 the necessary apparatus for producing a plurality of rearwardly directed fluid streams or jets such as flame jets, each represented in FIGURE 1 by one of the arrows bearing the reference character 13, such apparatus being indicated diagrammatically by the dotted line portions and being indicated generally by the reference character 14. It will be

relatively directed jet nozzle, such as the nozzle indicated at 15 in FIGURE 1, and it will be understood that the aft electrode 12 is arranged to intersect the axis of the jet issuing from each such nozzle.

As is represented diagrammatically in FIGURE 1, a source 16 of high voltage electrical potential is mounted within the hollow body 10 with its positive and negative terminals connected, respectively, to the forward electrode 11 and the trailing electrode 12, such connections being effected as by means of suitably insulated conductors 17 and 18. Negative charges, either in the form of electrons, negative ions, or negatively charged particles, are given up from the trailing conductor 12 to the jets, either because of the fact that the conductor is heated to a very high temperature by being immersed in the flame jets and so capable of thermionic emission, or due perhaps to the magnitude of the applied potential being sufficient to cause a partial ionization of the medium immediately surrounding the issuing jet, and due undoubtedly in part to the scrubbing action of the jet over the surface of the electrode in a manner analogous to the electrification of bodies by friction as, for example, when an amber rod is rubbed with a silken cloth.

Regardless of how the transfer takes place, it is clear that negative charges are injected into the jets by the trailing electrode 12. These negative charges are swept to the rear with the fluid stream at extremely high velocity and to a very great distance. This phenomenon continues and negative charges are steadily removed from the forward electrode 11 resulting in the electrode 11 acquiring a progressively higher positive charge. This charging of the electrode 11 will continue until an equilibrium is reached when the electrically charged particles escape from the jets and return to the forward electrode 11 at the same rate at which negatively charged particles are injected into the jets. It is believed that potential differences between the body and the gas cloud left in the wake of the vehicle by the fluid stream may be as high as fifteen million volts. It will be seen that when this condition obtains, the forward electrode 11 of the mobile vehicle itself corresponds to the positively charged leading conductor of the electrokinetic propulsive device disclosed and described in detail in my application Serial No. 669,830, filed July 3, 1957. The products of combustion or the fluid stream left in the wake of the vehicle correspond to the negatively charged body of the propulsive device disclosed in the above mentioned application. Thus, between the mobile vehicle itself and the gas cloud or fluid stream left in its wake, there is produced a force tending to move the surrounding medium past the mobile vehicle and to the rear of the trailing gas cloud. This force, of course, is accompanied by an equal and opposite reaction which serves to propel the mobile vehicle forward. With such an arrangement, the trailing electrode acts as a source of charged particles and the fluid stream acts through its kinetic energy to stimulate the emission from the trailing electrode. If the stream or jet is a flame jet, then the heat of the jet causes thermionic emission from the electrode in addition to the emission caused by the kinetic energy of the stream.

For these reasons any dielectric stream will produce the desired results. For example, a carbon dioxide generator may serve as the jet source. It is, however, preferred to use a flame jet source such as a burning hydrocarbon for the additional thermionic emission mentioned above.

By reason of the large dimensions involved and the extremely high potentials generated, the propulsive force so produced is very large. This is mentioned because while an augmenting thrust will, of course, be established by the issuing flame jets 13 alone, this thrust will be small compared to the electrokinetic thrust developed, the orifice 15 of the flame jets 13 being used primarily for gen-

developed by the apparatus.

In FIGURE 2, I have illustrated a differently shaped vehicle operating in a manner similar to that just described with reference to FIGURE 1. The vehicle illustrated in FIGURE 2 preferably comprises a torpedo-like body 20 fitted at its forward end with suitable fins 21 for controlling the direction of motion of the vehicle. The body 20 is hollow and is used to enclose, among other things, a source 22 of high voltage electrical potential. The positive terminal of the source 22 is connected to the electrically conductive body 20, as is represented for example at 23. The after portion of the body 20 is formed to define a nozzle which is indicated generally by the reference character 24, there being mounted in the after part of the body a suitable fluid stream source 25 such as a combustion chamber for burning an appropriate fuel to produce jet 26 issuing rearwardly from the nozzle 24. An electrode 27 is positioned within the rearward portion of the body 20. This electrode preferably extends axially through the rearward portion of the body terminating in a sharp point in the center of the throat of the nozzle. This electrode is connected as shown at 28 to the negative terminal of the high voltage source 22. In the instance of the flame jet, electrode 27 acts as a thermionic cathode.

The apparatus operates similarly to the device described with reference to FIGURE 1. The electrode 27 serves to inject negative charges into the issuing flame jet 26, which in turn serves to supply kinetic energy to those charges, sweeping them into a cloud behind the vehicle. As a result, the body 20 becomes charged positively and the potential between the body and the cloud of gases left by the issuing flame jets continues to increase until an equilibrium is established as described above. In a manner similar to that mentioned with reference to the electrokinetic vehicles in my application Serial No. 669,830 filed July 3, 1957, the mobile vehicle itself becomes the positively charged leading conductor and the electrode 27, flame jet 26 and resulting charged gas cloud becomes the negatively charged parts 26 of the system. The propulsive force is that which is applied to move the surrounding dielectric medium to the rear and toward the jet and trailing gas cloud, as previously described. As in connection with the vehicles the apparatus described in the above-mentioned application Serial No. 669,830, the thrust developed by the issuing flame jet serves merely to augment the large thrust produced by the generated electrostatic potential, the flame jet serving principally to produce the very high potential which is in turn responsible for a large part of the propulsive force developed.

In the illustrative embodiment of FIGURE 3 is shown the manner in which the flame jet generator principle described with reference to FIGURES 1 and 2 may be embodied in an apparatus for the generation of electricity for domestic or commercial use. The apparatus as shown in FIGURE 3 utilizes a hollow body 40 constituting a combustion chamber of suitable type in which the fuel is fed as by means of a conduit 41 and air or oxygen is fed as by means of a conduit 42. The suitably mixed fuel and air are burned within the combustion chamber to produce a high velocity flame jet 43 which issues from the chamber through a nozzle 44 formed as a part of the combustion chamber.

An electrode 45 is suitably supported within the chamber 40 and extends substantially axially through the chamber to terminate in a sharp needle-like point 46 in the throat of the nozzle 44. A source of very high voltage electrical potential 47 is arranged with its positive terminal connected as shown at 48 to the body 40 and its negative terminal connected to the electrode 45 as by means of a conductor 49, it being understood that the electrode 45 is suitably insulated from the body 40 as by means of an insulating bushing 50.

The structure just described will operate in the same

**Some of our current state ( + & - ) almost a half century after publication of *The World Crisis, Atomic Suicide?* Etc.**

**Health & Healing** - Here are the *averages* for the *annual* tabulated causes and mortality rates for the years 1981 to 1993 compiled from the Ntl. center for health statistics, Am. Assoc. of poison control centers, centers for disease control & prevention, Journal of the A.M.A., and the U.S. consumer products safety division: vitamins -1, commercial herbs - 0, smoking - 400,000, poor diet/no exercise - 300,000, pharmaceutical (drug) fatalities - 100,000, alcohol related deaths - 100,000, microbial agents - 90,000, firearms - 36,000, automobiles 23,856, drug abuse - 20,000, suicides - 19,000. This really speaks for itself - about the focus of health and healing in our world. **THINK ABOUT THIS** - when you consider your own lifestyle and from what kind of medicine you seek relief from your ailments; and whenever the FDA and AMA try to regulate ( suppress?) the natural healing movement.

**Earth Changes** - Read the *From The Archives* section with Dr. Russell's letter to Babcock and then review all the changes he predicted from radioactivity that have occurred. He was so right on that we be very, very foolish to disregard his message for replacing nuclear power, war and testing with non-polluting, peaceful and sustainable alternatives. The many earth changes he predicted have been happening so rapidly and numerously now that it would take a book to list them. Gordon Michael Scallion in his *Earth Changes Report* April 1998 gives the following warning signs for major Earth Change and West Coast earthquake activity: 1) His most recent vision was a major deep quake in Japan magnitude 7.0 or greater 2) His earlier warning visions were major volcanic activity in Italy at Etna or Vesuvius and major volcanic activity *at the same time* in the Caribbean. Other major signs that he had predicted in the past included the birth of a new volcano in the Mammoth Lakes region where ground temperatures have now risen and thousands of small quakes have occurred, although no lava has yet reached the surface; and undersea volcanic activity off the coast of Oregon or Washington which has been confirmed off both coasts and have been steadily intensifying in 1998. Edgar Cayce gave the year 1998 as the year of major earth changes.

**Government/Politics** - Joint Vision 2010 is a pentagon plan that was announced in a little known pentagon policy statement by General Shalikashvili, former Chairman of the Joint Chiefs of Staff of the US. It was reaffirmed in a speech to the Brookings Institution board of trustees in Washington D.C. May 12, 1997 by Defense Sec. William Cohen. Joint Vision 2010 envisions "leaping our forces into the future" Cohen admonishes that, "To do so, we must bring about the revolution in military affairs and begin to build the future force today". For that he is seeking the, "best people our nation can offer, equipped with the best technology our imagination can offer. *War & Peace Digest* , April/May 1998 Vol.5

No.2 Why not seek the best people our nation has to offer to be statesmen/women and equip the world with the the best in alternative and free energy non-polluting and sustainable technologies so that we might have enough if not more than enough for everyone so that we would not be locked into the old Malthusian mind set of 'finite sized planet, diminishing resources, grab all you can while you can', and thus go to war to take what we think will enrich us from our neighbors? If this plan continues to go forward for the next 12 years as envisioned Lockheed - Martin - Northrup Grumman - Etc stocks should skyrocket as should the US Taxpayers burden - and world misery/destruction.

**Religion** - I have not seen the movie *The Apostle* but have heard that it is perhaps one of only a few movies that realistically portrays what a religion ( southern Pentecostal ) is like in the US. Supposedly it neither glorifies nor denigrates the role that religion plays in the lives of much of the American public - but shows the ordinary and profound role that religion has for many. Robert Duval playing the main character as the preacher at one point shouts, " I love you but I am mad at you", which appears to me to reveal a bit of a marriage of new age and age old spirituality, if the movie really does depict what is happening in this religion.

**Art** - Shinichi Suzuki who died recently at age 99 believed that anyone could play music. He said, " Ability is never inherited. Only the body is inherited". Once he said, " I could have made Mozart tone-deaf by playing out to tune to him as a baby" Suzuki also believed in the power of culture to transform people saying to Stefan Wagstyl of the *Financial Times* , who is my source for this information, "We are still stone age people. We need music to learn to live in harmony". Sounds to me like he and the Russells were listening to and playing the same symphony. And, from Edgar Cayce we get the following quotes from his readings: "...Hence, as the attuning of music...arouses emotions in the body to an unusual degree, well that there be choices made as to what the emotions are that are aroused by the character of music...choose that which is constructive in the experience, and know it must partake of that which brings peace to the soul and not gratifying of body or of an emotion of the body alone *Edgar Cayce 1406-1* Music is that what appeals to the latent and the creative force within the entity. For music alone may span the sphere from the sublime to the ridiculous ...from the finite to the infinite... from the spheres of activity to realms of the divine. Music is like color, like tone, in that it is a destructive or a creative force ...depending upon that to which it appeals, in its influence upon individuals". *Edgar Cayce 622-2*. They all appeared to hear the music of the sphere(s). The Cayce quotes were from Dale Ponds *Certification Course in Sympathetic Vibratory Physics* Delta Spectrum Research, Box 5307, Bella Vista, AR 72714.

**Science & Technology** - Personal testimonies I've heard and read of tell me that If you have a truly innovative technology it is extremely difficult if not impossible to patent it in the USA. Cold Fusion is an example where there are over 200 worldwide patents excepting in the USA where cold fusion is "impossible". Many innovators that want to patent in the USA now have to also be doubly innovative; they must manufacture a bogus explanation and description for what they hope to more or less in that fashion patent. Question - can a patent like say on Cold Fusion or Transmutation that is described as something else and in "bogus" terms really be an enforceable patent? Norman Silliman in a letter to *New Energy News*, April 1998 Vol. 5, No. 2 says that since the real innovators that are able to look and create outside of establishment science are not able to get support (money) from the establishment, that what we need is an alternate plan and ask the technically educated people of the country for help. He suggests perhaps a New - Energy Mutual Fund for the market investors. The market has gained two thirds of its value in the last three years, so.... who knows? Might there be time left for it to work? Toby Grotz was in India in Dec. 1997 to investigate Paramahansa' Tewari's Space Power Generator and found it to be operating at over 250% over unity or efficiency. We are looking for investors to manufacture it in the USA. Contact me if Interested.

**Business/Commerce** - The surging stock market helped boost household net worth by 3.6 trillion last year alone. The stock market runup so far this year has added an average of \$3,700 to household net worth. That's on top of the \$14,900 gain created in 1997. *Business Week* 4/20/98 and *The Reaper* 4/22/98. Investors poured a record 37.5 billion in net new cash into mutual funds in March. That represents about 1.7 billion a day, most of it going into stock funds. That is more money than went into mutual funds in an entire year as recently as 1990. *WSJ* 4/10/98 & *The Reaper* 4/22/98. The internet search firm Yahoo! closed Thursday April 9 at 309 times expected 1998 earnings. *WSJ* 4/13/98 & *The Reaper* 4/22/98. If this is not a magnificent bubble, what is it? See the Science & Technology Section about Tewari's over unity Space Power Generator and if interested in more info and in helping manufacture it in the USA contact me!

**Agriculture** - since 1979 the number of American farmers has dropped by 300,000. 94% of America's 2,000,000 farms gross less than \$250,00 a year but they receive only 41% of all farm receipts from the federal government. *The Reaper* 4/22/98. Who gets the other 59%??

**Education** - Family conflict can affect some children's brains. Stress triggers the release of cortisol - and chronic high levels of cortisol affect the hippocampus, a part of the brain that is important for learning and memory. Also family conflict may impair growth". Scott Montgomery, PhD, Royal Free Hospital School Of Medicine, London *Bottom Line* 2/1/98 & *The Reaper* 4/22/98. This is another study or maybe it is just an observation, that seems so obvious as to be either tragedy or comedy.

**Miscellaneous** - A way to prevent worry is to change what you think and say to yourself as well as what you do. Worriers tend to talk to themselves in negative terms. Practice self observation and inner separation from negative self defeating talk and thoughts and actions! Then be active! Physical activity gives a break from acute worry and tends to prevent it. Regular meditation and prayer are also some of the best ways to prevent and treat worry. Also get connected. Get connected to the people in your life and if you don't have any then get some! Become an indispensable part of something greater than yourself and feel the connectedness and power that gives you as you lose yourself or find yourself in being connected to everything else. If you want to be different - do different! And, to quote the Russells, "Learn to do a thing by doing it".

## Newsletters/Periodicals

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### NEW SCIENCE/TECHNOLOGY/FREE ENERGY

*Electric Spacecraft Journal*. Published quarterly, annual subscription rate \$24, Canada/Mexico \$29, other countries \$39. ESJ publishes research articles on new science, inventions and network notes from the ESJ network of individuals sharing ideas about these topics. Devoted especially to discovering the means/mechanisms for "electric" spacecraft and all that such understanding would mean for our civilization. I have known the editor Charles A. Yost the last few years and he spoke at our 1995 symposium. I find Charles' ESJ to be interesting and informative, and although most articles are very technical there are aspects of the journal that the average reader should find comprehensible and of interest. Charles A. Yost editor. ESJ, 73 Sunlight Drive, Leicester, North Carolina 28748. Phone 704-683-0313 Fax 683-3511.

*The Space Energy Journal* Published Quarterly. \$35 U.S., \$40 Canada & Mexico, \$50 elsewhere. Jim Kettner and Don Kelly editors. This journal publishes the positive and the negative results of testings of free energy machines and other new science experiments. The discussion of new science ideas is technical and yet also very down to earth so that the average reader should follow most of it. I have met Don Kelly through my association with the International. Assoc. for New Science/ International. Symposiums for New Energy and he is familiar with the Russell work too. Space Energy Association, P.O. Box 11422, Clearwater FL 34616. Phone/ Fax 813-461-7119.

*New Energy News* is the newsletter from the Institute for New Energy. It is a collection of reports on inventions, ideas and of publications relating to alternate and free energy. Monthly free to members with member fee of \$35 and \$60/yr. to corporations, libraries and universities. Hal Fox Editor, P.O. Box 58639, Salt Lake City, UT 84158-8639. Phone 801-583-6232 Fax 583-2963.

The *Planetary Association for Clean Energy* newsletter publishes articles to facilitate the development of a wide range of clean energy technologies including free energy technologies. Usually quarterly \$35/yr. Canada, \$40 USA, \$45 elsewhere. Andrew Michrowski, editor, Planetary Assoc. for Clean Energy, Inc. 100 Bronson Ave. Suite 1001, Ottawa, Ontario, Canada K1R 6G8. Phone 613-236-6265 Fax 235-5876.

### INVESTMENT/INTL. POLITICS/ ETC.

*The Reaper*. 36 issues per publishing year. 1 year- \$195. 10 issue trial - \$60. *The Reaper* is a no holds barred newsletter examining our current global and national economic/political status with an eye towards assisting investors in commodities, currencies, real estate, etc., etc. Publisher R.E. McMaster Jr.

is an acquaintance of mine who I introduced to the Russell's work and I have subscribed to his NL off and on over many years - not because I am an investor ( I should be and if I would have followed much of his advice would have made some cash, but I'm too involved in other work), but because I have been fascinated with R.E.'s analysis of our world situation. Called the Indiana Jones of the Christian economists by some he has a 'Christian' point of view but it is not conventional in my estimation. He is aware of new energy and natural health/healing practices and reports on these areas at times. P.O. Box 84901, Phoenix, AZ 85071. Phone 800-528-0559.

### EARTH CHANGES/ESOTERIC

*The Earth Changes Report* 12 issues/yr. \$36; Canada, Mexico, Alaska & Hawaii \$46/yr.; \$56/yr. elsewhere. Published by futurist/psychic predictor Gordon Michael Scallion gives Gordon's psychic predictions and a review of his hits and misses as well as articles in the new age spiritual genre and a report of earthquake, climate changes, etc. worldwide. I have watched Gordon Michael's predictions for the last several years and while he is not 100% on target he has been close enough on enough times to be much more than just coincidence. Published in the spirit of better to be prepared for what does or does not happen than to be unprepared for what does happen, the ECR is a good monthly review of earth changes as they happen and of what might happen beyond most folks wildest dreams - both pro and con. Matrix Institute, P.O. Box 336, Chesterfield, NH 03443. Phone 1-800-628-7493.

### ESOTERIC/NEW SCIENCE

*New Science News*

published by the International Association for New Science (IANS) addresses metaphysical and esoteric perspectives on pro-social topics such as sociopolitical, new age, and new science concepts. I have spoken at several of their conferences on the Russell's work as well as alternative healing topics. Quarterly, \$35 membership. Bear Jack Gebhardt, editor, IANS, 1304 South College Ave., Ft. Collins, CO 80524

### KEELYNET NEWSLETTER/INFO EXCHANGE

P.O. Box 870716, Mesquite, Texas 75187

Subscription price unknown - Published Quarterly - Info on new energy science and health information exchanges. The publisher is Jerry Decker a long time Russell student, Keely student and investigator into all kinds of unusual phenomena.

### RATBAG ANTIPHYSIC NEWSLETTER



*Journal Of New Energy* published by the Fusion Information Center, P.O. Box 58639, Salt Lake City, Utah 84158-0638. A quarterly Journal subscription: \$150. Single Issues: \$45. This is a journal of the Institute of New Energy. It has published the papers presented at the first and second low energy nuclear reactions conferences held at College Station, Texas at Texas A&M University. This journal is top quality work presented by some of the leading thinkers and researchers in the field of new energy.

*Ecolonomics In Action* published by The Institute Of Ecolonomics Box 257, Ridgeway, CO 81432. A bi-monthly newsletter. A years subscription is \$35. It details the efforts of the Institute to transform our planet through business based on sound ecological principles. Articles on new energy, education, and any area of technology and commerce that can positively effect our lives may be published.

# *In The Wave Lies The Secret Of Creation*

by Dr. Timothy A Binder

This soft cover treatise on the Russell Cosmogony with 44 color charts, 10 black & white charts and 31 diagrams is now available. The book presents a Universal Systems Model that is applied to language in order to facilitate greater comprehension of the Russell Cosmogony. A comparison of Russellian Science and the Science of his time is given as is a description of the chief elements of the Cosmogony including: the eighteen dimensions, formula of the locked potentials, wave mechanics, the cube and the sphere, periodic charts, thermodynamic laws, and Newton's first and third laws versus the Russell Cosmogony to give a firm basis to understand Walter Russell's scientific paintings and charts.

An analysis of the paintings and charts comprises the second half of the book. Most of the paintings included in this volume have never before been published. The cover of this issue of *Fulcrum* has one of these paintings as its front cover piece.

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