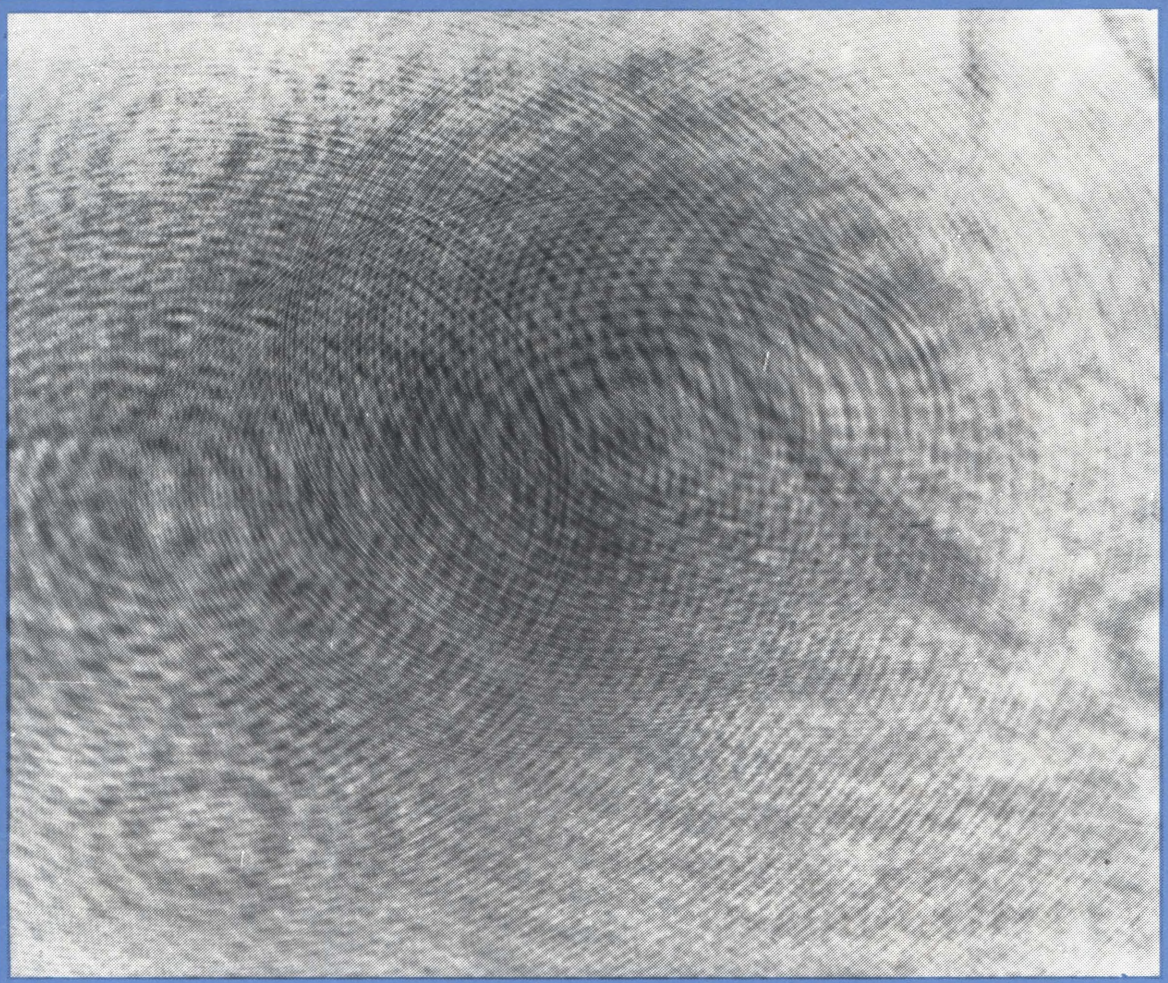
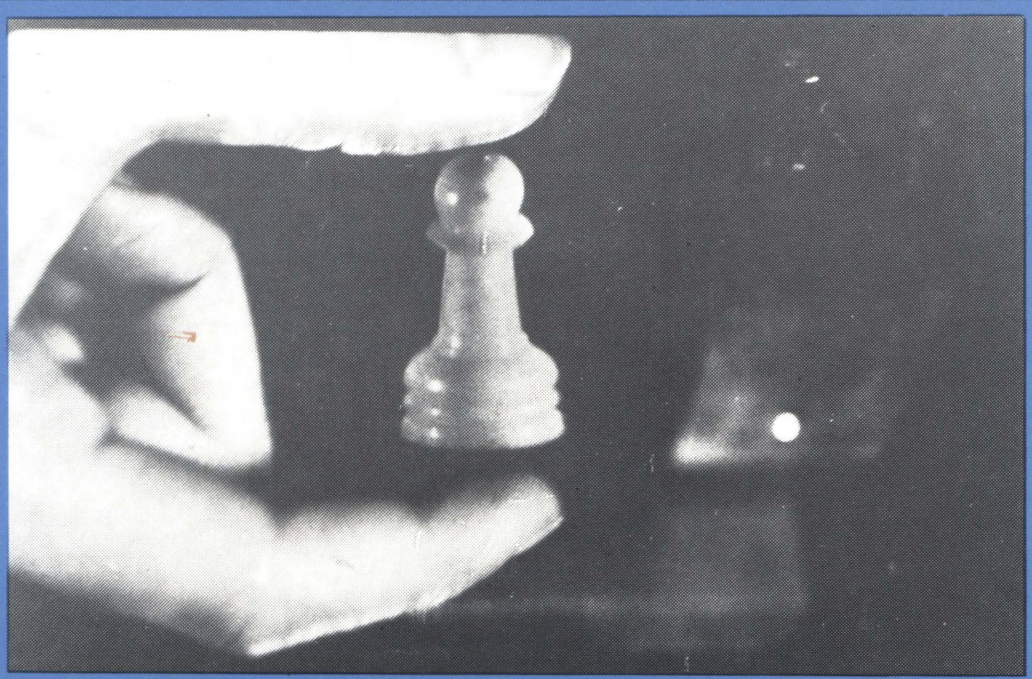
THE JOURNAL OF THE SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

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HOLOGRAMS



WHOLE No. 41 VOL. 11, No. 1 WINTER 1978

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P.O. Box 265
Little Silver, N.J. 07739
Telephone (201) 842-5229

Membership/Subscription information
SITU
Membership Services
R.F.D. 5
Gales Ferry, CT. 06335

Editorial Office
SITU/PURSUIT
2008 Spencer Rd.
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PUBLICATIONS

Our publishing schedule is four (quarterly) issues of PURSUIT, dated Winter, Spring, Summer and Fall, and numbered as annual volumes — Vol. 1 being 1968 and before; Vol. 2, 1969, and so on. Membership and our quarterly journal PURSUIT is $10 per year. Subscription to PURSUIT, without membership benefits, for libraries only, is $8 for 4 issues. Order forms for back issues will be supplied on request.

PURSUIT is listed in Ulrich's International Periodicals Directory and in the Standard Guide to Periodicals; and is abstracted in Abstracts of Folklore Studies. It is also available from University Microfilms, 300 N. Zeeb Rd., Ann Arbor, Michigan 48106. The price is $4.10 per reel. An annual index appears in the Fall and Winter issues.

'SCIENCE IS THE PURSUIT OF THE UNEXPLAINED'

VOL. 11, No. 1
WINTER, 1978

PURSUIT®

THE JOURNAL OF THE SOCIETY
FOR THE INVESTIGATION OF THE UNEXPLAINED

FOUNDED BY IVAN T. SANDERSON

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® Society for the Investigation of the Unexplained 1978

On the cover: Two photographs produced in the laboratories of Holografix, Inc., 7250 S.W. 126 Street, Miami, FL 33156. They were provided by holographer Mark Diamond.

The top photo shows (in actual size) interference patterns caused by the interfacing (at the plane of film) of two light wavefronts, which allows the storage of information concerning the object being recorded.

The lower photo shows the holographer's fingers, which appear to be holding a chess pawn. The pawn is actually a three-dimensional projected image, a hologram, which represents an image that (unlike a photograph) is microscopically accurate.

LOCH NESS UPDATE, 1977

By Joel A. Strasser

By year's end, 1977, the elusive Loch Ness animals had been reported seen by no less than 20 people in nine separate sightings from the banks of Scotland's famous Loch Ness, according to Frank Searle, a seasoned Nessie hunter who has spent the last eight years on the watch.

Searle, who took up residence on the banks of this strikingly scenic Scottish lake back in 1969, has spent thousands of hours out on the water in small boats, and claims to have sighted Nessie 29 times and photographed the animals eight times. He also serves as a collector of reported sightings and tries to authenticate or debunk sightings based on their individual merit and substantiation.

During a recent trip to Loch Ness, we set out to find — not Nessie, because she's so elusive — but some of the Nessie hunters, to find out what they had seen during the summer of '77. Although we missed some of the more prominent names in the Nessie search — they had returned home for a brief respite before resuming their search in the fall — we did manage to spend some time with Searle who's made Loch Ness his home.

Of the nine reported sightings for the year, according to Searle, the most recent occurred on September 15 when a frequent visitor to the loch from North Wales sighted Nessie from a point near Fort Augustus, at about 3:25 p.m. (See map, compliments of Frank Searle.) The observer watched with his 10x50 binoculars as a big back broke the surface over toward the other bank. Then he lowered his binoculars to get a better look with the naked eye, but was apparently so surprised by its appearance that he didn't think to use the camera which lay near his side, fitted with a 500-mm lens.

The week before, on the evening of September 8, a family from Staffordshire was on the beach between Invermoriston and the Alltsaigh Hotel, when suddenly the lady of the family saw what seemed to be the back and neck of a Nessie break surface with a big water disturbance. Because their camera was not conveniently ready they failed to get pictures, but the family reported sighting the animal at 8:10 p.m. for about ten seconds at a distance of about one half mile.

On August 8, Searle himself spotted Nessie opposite Boleskine at about 5:40 in the afternoon.

On June 21, Searle reports, three other people saw Nessie at 4:25 in the afternoon opposite the village of Abriachan on the loch.

Earlier in the year, a couple from Southampton, England were outside their vacation cottage near Fort Augustus at 8:50 p.m. on April 30 when suddenly they sighted a large gray lump, about ten feet long and three feet above the surface, making obvious ripples on the water's surface. The sighting lasted for 8 to 10 seconds.

Just three days before, an American from Del Rey, California saw Nessie at 2:05 in the afternoon about a mile from Fort Augustus, on April 27. This observer reported seeing something which he took to be the head and neck of a Nessie protruding some four feet from the water, which was dark gray in color and visible for about 10 seconds. The man tried to take a picture of the animal, but the 50-mm lens on his camera was no match for the 150-yard distance which separated him from what he observed.

Earlier, on March 24, Nessie was seen by two witnesses near Invermoriston at 4:25 p.m. In January, Nessie was seen on two separate occasions by two different groups of three people each; once on January 22 at Fort Augustus at 2:20 p.m., and once on January 4, opposite the Clansman Hotel near the northern end of the loch at 11:45 a.m.

Nessie is very much in evidence, says Searle, who notes that there were 13 sightings of the animal on Loch Ness in 1976.

Searle specializes in surface photography as the best way to get good pictures and clear evidence of the animals. He usually spends his daylight hours out on an 18-foot cabin cruiser, frequently with his assistant who also serves as a witness.

Searle uses many cameras, but his main piece of equipment is a 16-mm Canon Scopic automatic movie camera fitted with an 8X zoom lens. He also carries three 35-mm single reflex still cameras, equipped, respectively, with 1,000-mm, 450-mm and 135-mm telephoto lenses. All four cameras are loaded with high-speed color film.

Searle says that aside from catching one of the animals, which have been protected by local law since 1934, he is convinced that the best foolproof evidence will come from surface photography. His goal is a piece of color motion picture footage from close range and with good background and something else in the pictures to determine the size of the object, backed up by simultaneously exposed still photography, ably handled by his assistant, Lieve Peten, a Flemish girl from Belgium.

Within a few feet of the water's edge, Frank Searle has set up his Loch Ness Information Centre, a combination showroom and living quarters. The centre, which is open to the public, carries numerous newspaper clippings, a complete log of all sightings for the year to date, and numerous other pieces of information of interest to followers of the investigation. Here can also be seen a large assortment of enlarged photos taken within the past few years —photos we had not seen published elsewhere before.

(Searle told us that he had just started a newsletter to keep his followers up to date on his activities, and now has about 100 subscribers. The newsletter is available for $5 per year U.S. [please don't send stamps, which cannot be used in Scotland] directly from Frank Searle, Loch Ness Investigation, Lower Foyers, Inverness-shire, Scotland.)

In our quest for other Nessie hunters, we talked with Ronald Bremner, owner of the Drumnadrochit Hotel, about 15 miles south of Inverness on the western side of the loch, and he advised that several of the other Nessie observers had departed early in August but were expected to return in September. He indicated that he was not aware of any major sightings by the other groups who used his hotel as a base or message center.

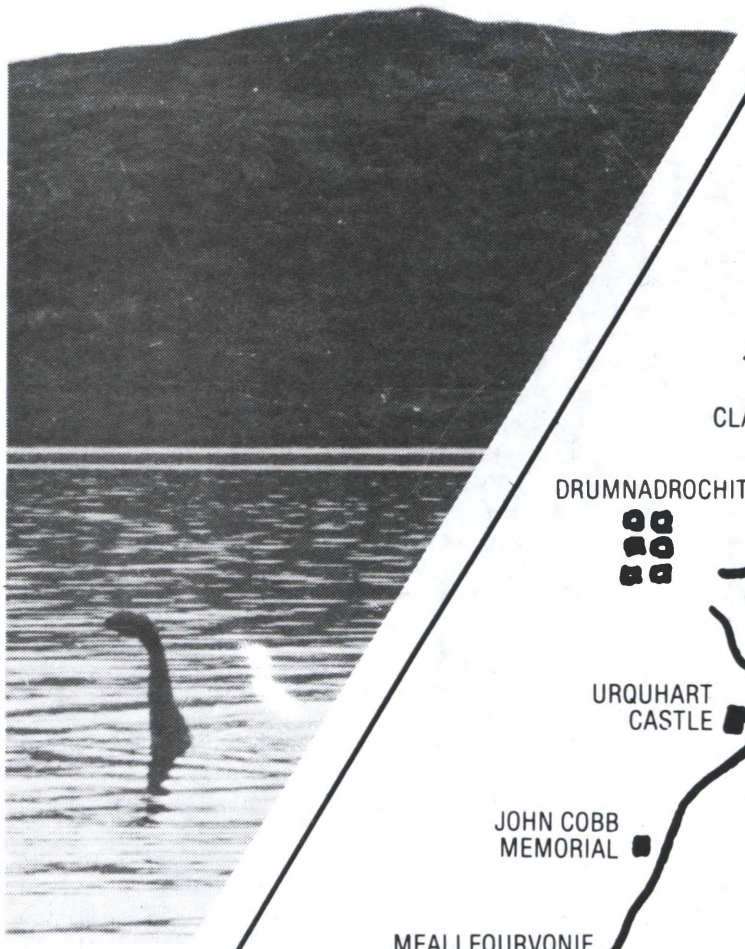


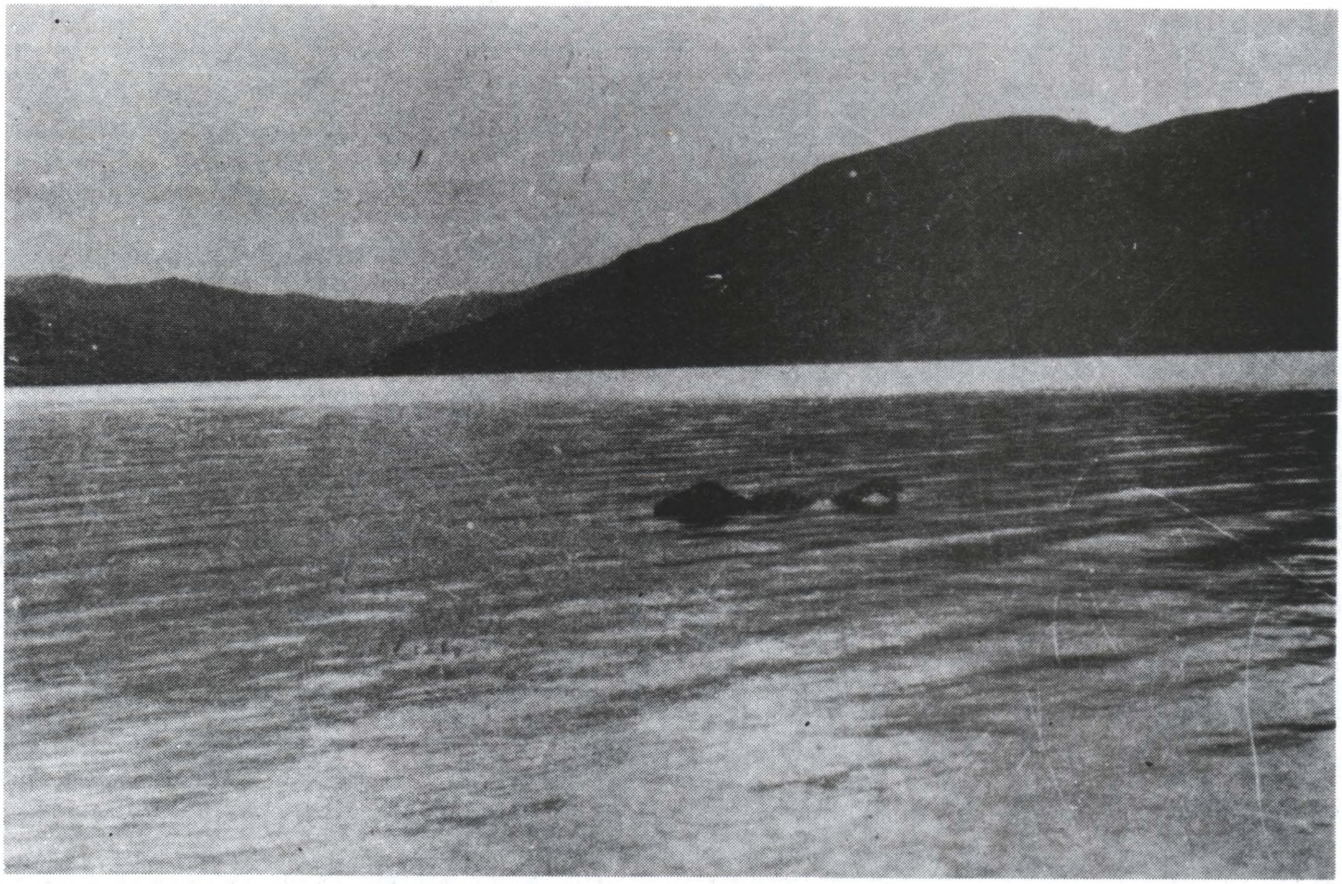
Photo taken by Frank Searle in July, 1974.

© Frank Searle

LOCHEND
ALDOURIE CASTLE
ABRIACHAN
DORES
JUNE 21
CLANSMAN HOTEL
DRUMNADROCHIT
BALACHLADAICH FARM
JAN. 4
URQUHART BAY
URQUHART CASTLE
WHITEFIELD FARM
JOHN COBB MEMORIAL
INVERFARIGAIG
MEALLFOURVONIE 2,283 FT.
AUG. 8
SEPT. 8
MARCH 24
POWER STATION
BOLESKINE HOUSE
FOYERS HOTEL
INVERMORISTON
FOYERS
FRANK SEARLE LOCH NESS INVESTIGATION
APRIL 27
JAN. 22
SEPT. 8
KNOCKIE LODGE
FORT AUGUSTA
CHERRY ISLAND
APRIL 30
ABBEY

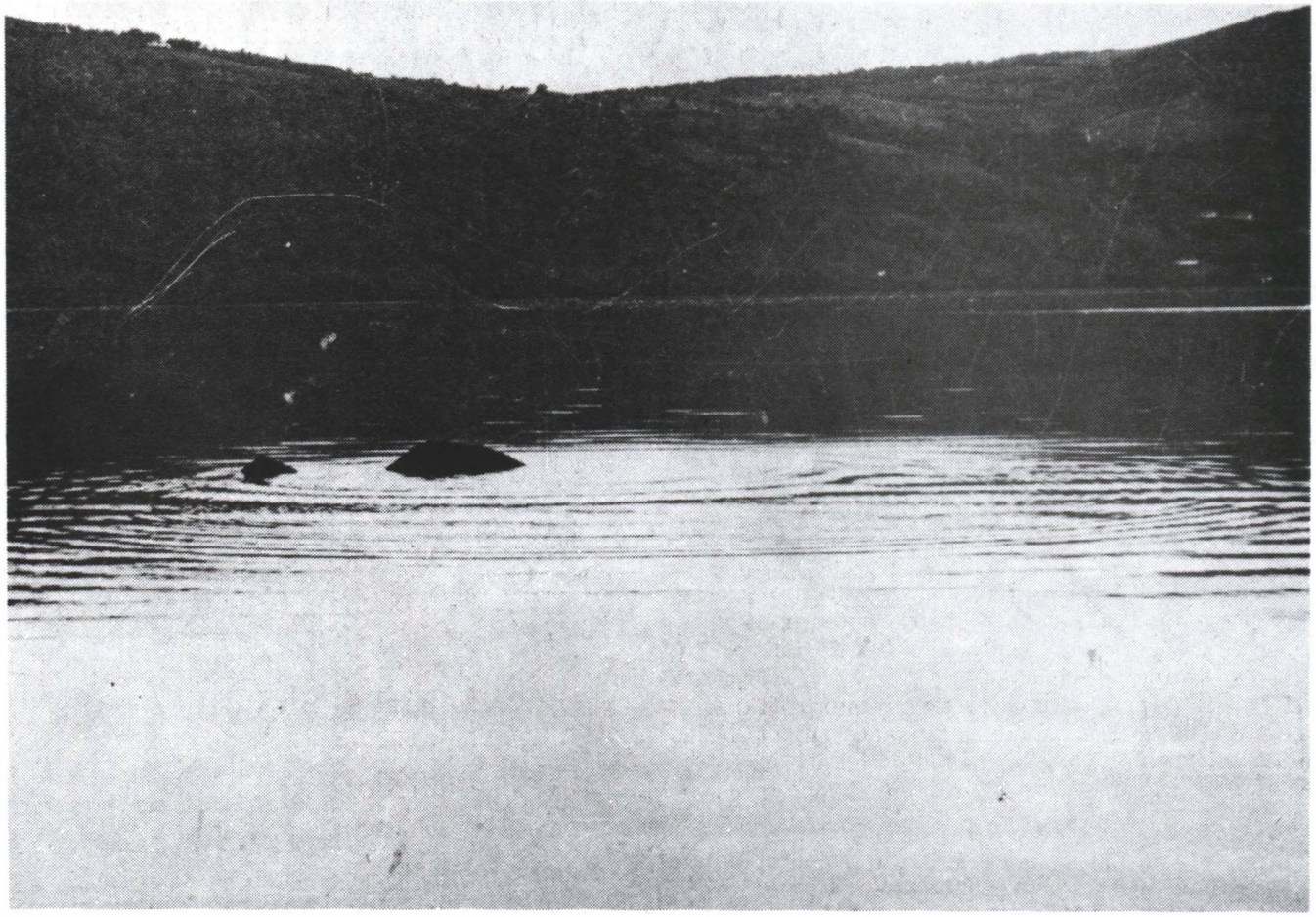
LOCH NESS 1977

(Map courtesy of Frank Searle)



Two photos taken by Frank Searle. Below: taken Oct. 3, 1972. Above: no date given.

© Frank Searle



© Frank Searle

We chose to spend our nights in inexpensive accommodations, such as guest houses and bed and breakfast establishments, partly because we could talk less formally with typical Inverness citizens. It was interesting to note that when they realized we were Americans, they appeared to share the expected reticence about Nessie one would expect in the U.S. But, when they became aware that we were American journalists who had been following the news from Loch Ness and were treating the subject in a serious vein, their reticence disappeared as they began to recount how they themselves had either seen Nessie at one time or another, or certainly their friends and relatives had over the years. To these people it was no mystery, Nessie is a fact of life.

One of the unpublicized surprises of our journey to Loch Ness is the fact that the highlands area around the loch abounds in strikingly beautiful scenery, and is perhaps the primary or secondary reason that Inverness and Fort Augustus are becoming strong attractions for tourists. As one drives around the lake in its entirety, particularly along the single-track roads on the southern length of the loch, the casual visitor is struck by the beauty of the surrounding mountain ranges, smaller lochs, picturesque plains and other scenic features.

Getting to Inverness, for the time being, is another story, however. The road to Inverness is generally a lengthy 100-mile-plus ride through the mountains up a single lane road from the city of Perth which, during our trip, was frequently interrupted by construction. One can't help but be struck by the fact, however, that slowly but surely a major motorway is being put together that will eventually speed visitors to Inverness on modern high-speed roadway — perhaps in time to visit Nessie when and if she becomes a willing and regular attraction. The Scottish road builders seem to be putting their money on "when" rather than "if."

PUBLICATIONS

The city of Inverness and its many little stores and souvenir shops turns out to be an excellent source of reading materials about the Loch Ness mystery. We decided to purchase every book we saw, since they did not seem to be available in the United States, and some contained excellent photographs not generally found in references available in the United States.

The following is a sampling of publications we acquired:

1) *Around Loch Ness, A Handbook for Nessie Hunters,* by Frank Searle. This 32-page book, copyright 1977 by Searle, is available at local sales outlets, and from Searle directly at his information centre. It contains numerous tips for making photographic observations of Nessie and includes several surface photographs of Nessie made between 1972 and 1974. Price is 35p.

2) *Loch Ness Revealing its Monsters,* by William Owen, is a 36-page booklet which tells the story of Loch Ness and gives some general information about the search for the Loch Ness animals. Printed almost entirely in color, this publication includes numerous photographs in color and black and white of the animals, the local scenery and scenes of Loch Ness investigators at work. Published by Jarrold Colour Publications, Norwich; price 40p.

Nessie in the Pacific?

Perhaps the most exciting potential development during 1977 in the quest for Nessie occurred not in Scotland, but many thousands of miles off the coast of New Zealand. In April, a Japanese fishing trawler managed to snare the 30-foot long carcass of a strange creature that had a neck five feet in length, a tail six feet long and four flippers, with a total weight of about two tons.

The dead animal, caught in fishing nets, was hoisted to the surface from a depth of about 1,000 feet. According to the fishermen, the stench was overpowering, and they feared the oozing fatty liquids would spoil their cargo of fish, and ultimately dropped it overboard. However, the crewmen did have the presence of mind to measure the animal, make a drawing, and take several photographs before disposing of it. They also kept a sample of the animal's tissue.

3) *Loch Ness and the Monster,* by Nicholas Witchell, published by J. Arthur Dixon Limited, Newport, Isle of Wight, and Inverness, Scotland, copyright 1975. This 32-page booklet tells the story of the search for the Loch Ness animals and includes numerous color photographs of the animals as well as local scenery in the Loch Ness area. Price, 39p.

4) *Loch Ness Monster,* by Tim Dinsdale, published by Routledge & Kegan Paul (London) is a more extensive publication (161 pages) revised in 1976 from its original 1961 edition; price £2.25. This volume gives Tim Dinsdale's personal impressions and analyses, and has numerous photographs and explanatory diagrams.

5) *Loch Ness Country by Car,* published by Jarrold and Sons, Ltd.,Norwich, as part of its White Horse series of guide books, is a useful map and guide for exploring the total surrounding area around Loch Ness. The 32-page booklet contains numerous strip maps of the automobile roads which circle the loch, and provides detailed descriptive information with some photographs to help a first-time visitor find his way around the loch and see all the points of interest in the immediate vicinity of the area. Price, 45p.

NESSIE SIGHTINGS ENDANGERED BY ILLEGAL SALMON NETTING

By Joel A. Strasser

Illegal netting of salmon from Scottish waters now poses a major threat to future sightings of the elusive animals that inhabit Loch Ness, according to new reports from Frank Searle.

Searle is disturbed by news of the dwindling fish population, which brings the elusive animals to the surface.

Last year, Searle says, "some half-a-million salmon were taken illegally from Scottish waters. Herring drifters, deprived of their normal fishing by the EEC ban on herring catches in the North Sea, had been netting salmon in large numbers before they were able to enter the rivers and the lochs for spawning.

"Certainly, the fishing season on Loch Ness was a disaster for most of the local fishermen," Searle says. "Even the very best of them took only about one-third of their normal quota."

But, Searle warns, "at present, it seems that no serious steps are being taken to stop this indiscriminate netting. If it continues for the next three years," he predicts, "very few salmon and seatrout will remain to run up any Scottish river. And if this sorry state of affairs does develop, it could well affect the sightings of our Loch Ness animals."

According to Searle, "at present, something like 75,000 salmon and twice that number of sea-trout run through the loch each year, and these fish, up to 40 pounds in weight, are all within six or seven feet of the surface. This brings the Nessies up so close to the surface that obviously they must show themselves occasionally."

With a huge population of brown trout and eels, there could well be enough food in the Loch to maintain the population of Nessies, Searle says, but their feeding habits would have to change drastically. "But, take away these shallow running fish and we find that the bulk of the food supply would be down at much greater depths," Searle says.

"Given that situation," Searle warns, "and it could well come about within the next few years, there would be no apparent reason for a Nessie to ever come close enough to the surface to show itself.

"With the lack of visibility in this peaty water making underwater research" virtually impossible, "I just don't know where we'd go from there. The main hope," Searle says, "is that I, or some other real Loch Ness enthusiast will come up with some very conclusive evidence in the near future."

Another solution would be if the weight of public opinion and sentiment could be brought to bear against the British and other governments to enforce salmon-fishing regulations in and around the North Sea.



THOSE PALENQUE REMAINS

By Russ Reardon

What really needs to be said and done about that skeleton at Palenque: turn over his tissue and bone samples to a team of Pathologists then publish their findings. These remains could be those of a True Man. Author Brinsley LePoer Trench and Theosophist Madame Blavatsky speculated that (Halach Uinic) True Man, does *not* have an earth-animal body. His is a different chemical structure and function. Created elsewhere in the Universe (*The Sky People*, B. L. Trench, Award Books).

Such speculation can be brought down to earth through Medical analysis.

Why Palenque? There are heady clues proposed by other authors — "The figure on the Palenque slab may be a portrait of the dead man buried in the pyramid" (Robert Charroux, *Masters of the World*, Berkley Medallion Books); "The feeling that it is a space traveler haunts you" (Eric von Daniken, *In Search of Ancient Gods*, Putnam); Kukulkan, "one of the 'sons of the Elohim' who had remained behind in planetary systems already visited and civilized" (Jean Sendy, *The Coming of the Gods*, Berkley Medallion Books); "Inside the pyramid supporting the Temple Of The Inscriptions, was found the remains of a tall man" (Bradley Smith, *Mexico: A History in Art*, Doubleday Windfall). The term "tall" is rather significant since there is absolutely no record either pictured or in a readable Maya glyph of a tall Maya.

The Maya of Central America relate of how a bearded white God, Kukulkan, came down from the sky in an age long past. The sarcophagus lid pictures an astronaut at the controls of a space ship. His name, too, is on it probably, but we cannot decipher it since in Maya hieroglyphics only the characters employed in the calendar are known for certain (fig. 1).

Exactly as the sarcophagus lid bearing the likeness (in solid gold) of King Tut identified the deceased beneath, invariably the exhumed remains of any grave will be those of the person named (or pictured) on the tombstone.

According to some esoteric beliefs, the Elohim created True Man in another part of the Universe. Those creations came to earth, inter-bred with earth-animal man (created by the Jehovah), and hence created the integrated species Cross Man. Again, such beliefs could be brought to task under tRNA analysis, roentgenology, electrophoresis, other molecullar-cellular microbiology and photoluminescence dating. Such tests however, could support classical archaeologists who state that it's Lord Shield Pacal (circa 600 AD) buried there. I hesitate to dwell on the ramifications of finding it's a body of 'different chemical composition' than ours. Also the tests would involve *no financial outlay:* all doctors and a number of both state-run and private laboratories are *donating their time and effort freely (Manchester Guardian* Dec. 12, 1976) examining the remains of Rameses II. Other genetic methods of paleostudy may also be worth trying.

Biologists at Oklahoma University were astonished to find that the epithelial cells of a 322 BC mummy were still intact. The combined fields of cytology and genetics says this has led to the theory that cells are neither living or dead — only intact or not intact. This means the tRNA molecule with its genetic blueprint for a complete organism is also intact. It lacks only the materials needed to organize the structure and the enzymes necessary to continue life. Most scientists, however, say it is still technologically impossible to provide the necessary materials; but when these are available, the genetic blueprint



B. Wilkie drawing after a photograph

Figure 1 The sarcophagus lid

could be followed and a living, breathing Galactic Kukulkan would arise from his own tissue!

Dr. J. Allen Hynek says, "essentially we don't know any more about UFOs today than we did in 1947 when Kenneth Arnold saw them over the Cascade Mountains. Even after thirty years more of photos, imprints, contactee stories; even backing up through an avalanche of extraterrestrial reports and theories in hundreds of books over thousands of years, we face the unknown." Should that skeleton be who the clues say it is then we're in for one really out-of-this-world medical story, among other spin-offs.

Looking closer at figure 1, we see also the 'key of life' in bas relief which is remarkably similar to the schematic pattern of tRNA (fig. 2, from *Genetic Code*, W. Gajewski, Problem #7, 1975). Nobel prize winners Orgel and Crick call this design a clover leaf of transcriptional rybonucleicacid which guides all protein synthesis in all living beings. (See also other Palenque bas-relief depictions of the 'key of life' motif.) Who gave that stone mason the symbol for our genetic code? Perhaps it was he who is buried there ...?

Having seen the shapes on the Palenque tomb slab through the sounds surrounding it in the disciplines of Archaeology and Art History, we could hardly publish Mr. Reardon's interesting article without a brief explication of the motifs as they appear. None of these motifs are unique — all appear elsewhere in Mayan art.

The border of glyphs separated by double bands may have astronomical significance — as the signs for Venus and the moon appear among them. The central figure, carved in very low relief, displays conventional bracelets, anklets, and head-dress (such as one can see pictured in the Dresden Codex), and is seated on a grotesque mask beneath which a row of teeth emerge from a very abstract dragon mask (the extreme abstraction of Maya serpents and dragons is dealt with in Spinden's Ancient Civilizations of Mexico, *(American Museum of Natural History, New York, 1928) whose jaws enclose both mask and figure. A "foliate cross," surmounted by a plumed tropical bird, forms a background for this half-reclining figure. The cross bears a serpent with a head at either end arched about it, forming the foliations, which are dragon masks from the mouths of which sprout forth smaller masks of the Chacs (long-nosed rain gods). Small glyphs, perhaps of the day sign Ahau, float in the framed space along with unassociated numbers.*

That this image should bring to us an astronaut at the controls of a space-ship might suggest that all tombs can cast upon us the spell of space travel, bringing to mind through the thought of an Egyptian funeral boat or Viking chief's ship burial, the human hope of a larger voyage beyond our earthly journeys.

B.W.

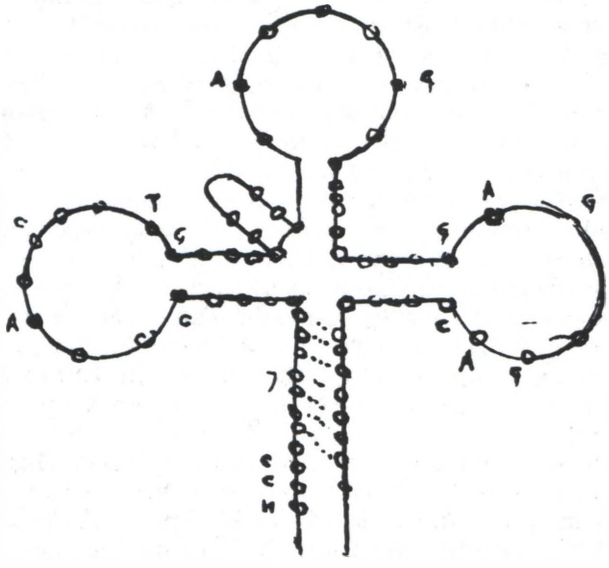


Figure 2 Drawing originally published in *Ancient Skies*, Vol.3, No. 4 and reproduced here with permission. *Ancient Skies* is the official logbook of the Ancient Astronaut Society, 600 Talcott Rd., Park Ridge, IL 60068, USA.

Finally, even Mexican officials are sympathetic to esoteric investigators. When von Daniken visited Palenque the following people were open-minded to his non-clas-

sical research: Sr. Mario Leon Tovilla, Chief Archaeological Zone; Sr. Celedonio Mercado, guide and photographic assistant; Sra. Victoria Echeverria, apartments and arrangements. Their past cooperation has demonstrated that they would probably only cooperate further with any attempt to deliver bone and tissue samples to Pathologists.

Finally, nothing at our disposal today can be cited conclusively to testify to an extraterrestrial visitation. In my view, the very integrity of the authors and researchers quoted above must be acknowledged by a careful study of those remains at Palenque, Chiapas, Mexico.



WHAMOND'S LAW REPEALED

By S. Marriott

I. INTRODUCTION

In its spring edition, *Pursuit* (Vol. 10, No. 2) published an article by Mr. William H. Whamond entitled "Little Green Men and the Law of Dynamical Similarity." Having read his article with great diligence, I find there are a number of problems he must surmount before his claims that his conclusions are "proved and inescapable" can be accepted.

II. THE ABRIDGED WHAMOND

For the benefit of those readers who do not recall the article, Mr. Whamond's arguments went roughly as follows:

1) Considering the large proportion of UFO occupants reported to be both humanoid and of small stature, it seems likely to Mr. Whamond that there must be some particular reason for their small size relative to the average human.

2) The combination of small size and humanoid features reminds him of a scaled down human, which he dubs a "mini-man."

3) Digressing for a time to explain modeling (scaling) techniques, he discusses two points he feels are of particular importance, these being the "Law of Dynamical Similarity," and the "Square Cube Law of Architecture." He does not state either of these laws in full; but judging from the context of his article, the Law of Dynamical Similarity states: "Not all characteristics of a model vary in direct proportion to scale." As a prime example of this law, he points to the Square Cube Law of Architecture, which states that the compressive stress on the foundation of a building varies as the height of the building, cubed, divided by the area of the base (or words to that effect).

Mr. Whamond points out that an architect wishing to reproduce a building on a scale of two-to-one would have problems if he simply doubled all dimensions, because the volume (and therefore the weight) of the building would increase by a factor of eight while the base area of the building would increase by a factor of only four; effectively doubling the compressive stress on the foundation, walls, and other supports. Using standard engineering practice, this problem can be alleviated by dimensioning the foundation and other supports of the building on a scale of 2.828 (the square root of eight) rather than two.

4) With an eye toward off-world applications, Mr. Whamond points out that the problem can be solved with equal effectiveness by reducing the force of gravity, and thereby the weight of the building, to half its normal terrestrial value.

Expanding on this notion and its converse, he concludes that buildings will be larger on low gravity planets, and smaller on high gravity planets, than they are on Earth. He further concludes that the inhabitants of such planets are likely to follow suit.

5) Returning to the main topic, he then evaluates several models for high-gravity humanoids (which he labels the "mini-man," the "droopy," and the "heavy-duty cutie") in light of the engineering discipline of Statics. On the basis of this evaluation, he rejects all models but the mini-man. His primary concerns are the level of compressive stress on the legs and waist, and the shear stress and bending moment exerted on the arm.

6) Extrapolating from this evidence, he postulates "Whamond's Inversely-Solely Law of Gravitation," which states that, "In order to be functionally viable, a man (or any other structure) must become proportionally reduced in all three dimensions (i.e. "holographically") inversely solely as the G-value of the planet on which he lands."

7) He then demonstrates various applications of his law, promotes the advantages of being small, and digresses into a number of related and unrelated topics.

My summary is, naturally, considerably shorter than the sixteen pages Mr. Whamond originally required; but I am confident it captures the essence of his arguments. Before continuing, I must point out for the sake of clarity that he refers to the mini-men's high-gravity planet as "Planet G," the "G" representing a multiple of Earth's gravity, "g." For the purpose of simplifying calculations, I will arbitrarily set G equal to two, although it could equal any number. Also, it is important to note that he considers the "average human" to be perfectly adapted to Earth's environment, and that he considers his mini-men to be flesh-and-blood duplicates of human beings, although on a smaller scale.

III. PROBLEM ONE: THE ANALOGY

My first objection to Mr. Whamond's theory is that it is based on a faulty analogy. His theory applies very nicely to buildings. As far as I have been able to determine, all his figures are correct in that respect. For some reason, however, he analyzes the stresses on the human body as though it too were a building, which it is not.

For instance, when analyzing the "heavy-duty cutie," he speaks in terms of increasing the cross-sectional area of her legs and waist, compared to that of an Earthling, to compensate for the higher compressive stress due to the gravity of her home planet. This approach implies that she is constructed like a solid block (i.e. a brick, [see 1; 36, 39]). Actually, the only weight-bearing structural members in those parts of the body are the bones of the spine and legs. Increasing the cross-sectional area of those bones will help to reduce the level of compressive stress they undergo, but increasing the cross-sectional area of the other organs in those places will not. Speaking strictly in terms of the criteria Mr. Whamond uses in his evaluation, it makes no sense to maintain that the cross-section of the entire body must be increased when increasing the cross-section of the bones alone will suffice to reduce the extra stress.

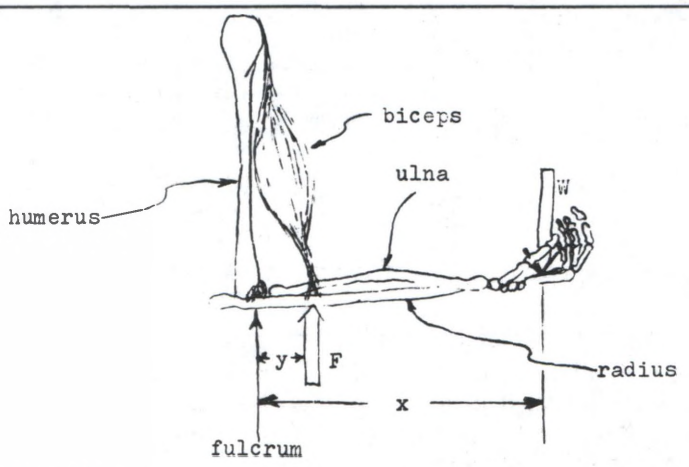
Of course, a humanoid with thick bones would not be the "gorilla-muscled superman" creature Mr. Whamond had in mind (1; 38). A humanoid adapted to high gravity would indeed require greater bulk than the average Earthman, although not to reduce compressive stress. What is involved is a question of strength.

IV. PROBLEM TWO: MUSCLES

In his analysis of the various models for high gravity humanoids, Mr. Whamond presumes that the capabilities of the human body are at an optimum, and that humanoids on other planets must be as capable of withstanding the same stresses, proportional to their size, as humans on Earth. He claims, for instance, that, given a concrete block representing the limit of human lifting capability, a mini-man on Planet G could just lift a similar block having each of its dimensions reduced to 1/Gth those of the human limit (1; 42). In other words, assuming that G=2g, a mini-man on his home planet should be able to lift a concrete block one-eighth (i.e. $[1/2]^3$) the size of those a human could lift on Earth. Unfortunately for his theory, such is not the case.

To illustrate this point, let us examine some of the workings of the human arm. The radius and the ulna (bones of the lower arm) form a lever with the fulcrum at the elbow (see Figure 1). The biceps, the muscle which lifts the arm when it contracts, is attached to the radius about one quarter of the way from the elbow to the palm, so that the force to lift the arm is being applied perhaps three inches from the elbow. The weight that must be lifted, however, is in the palm, about twelve inches from the elbow. Therefore, for every pound placed in the palm which must be lifted, the biceps must exert a force of four pounds (2; 113, 114).

If the human arm is scaled to half size for the mini-man, the mechanical advantage of 1:4 will remain unchanged, meaning that his biceps must still exert four pounds of force for every pound to be lifted. The mini-man's biceps, however, will have only one-eighth the volume of an Earthman's, and will therefore be capable of exerting only one-eighth the force. The problem is that the block will weigh twice as much on Planet G as it will on Earth; meaning that Mr. Whamond is asking his mini-man to display



To lift a weight placed in the palm, Fy must equal or exceed Wx. If m is the greatest mass a human can lift on earth:

FOR HUMANS ON EARTH

$W_h = mg$

$F_h = \frac{W_h x}{y}$

$= \frac{mgx}{y}$

FOR MINI-MEN ON PLANET G

$W_m = \frac{m}{G^3}(Gg)$

$F_m = \frac{W_m \frac{x}{G}}{\frac{y}{G}}$

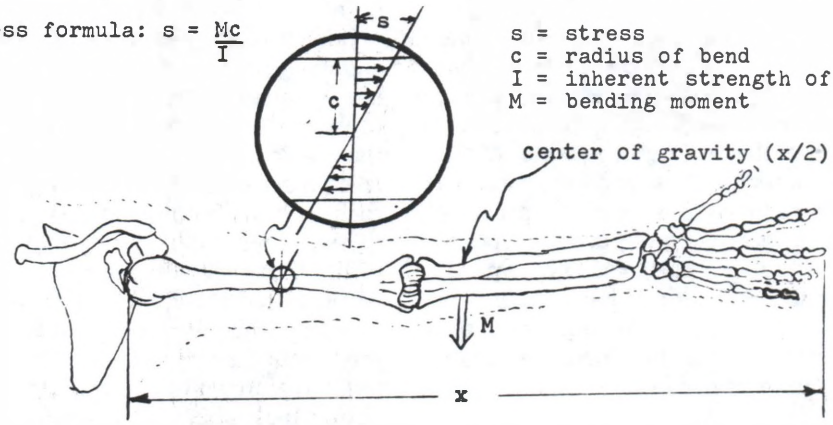
$= \frac{mgx}{yG^2}$

$= \frac{F_h}{G^2}$

Figure 1

Stress formula: $s = \frac{Mc}{I}$

s = stress
c = radius of bend
I = inherent strength of shape
M = bending moment



Where r_1 = the cross-sectional radius of the bone

r_2 = the cross-sectional radius of the arm with flesh

m = the mass density of flesh and bone

FOR HUMANS ON EARTH

$$M_h = (\pi r_2^2 x)(mg)\frac{x}{2}$$

$$= \frac{\pi r_2^2 x^2 mg}{2}$$

$$I_h = \frac{\pi r_1^4}{4} \quad *$$

$$c_h = r_1$$

$$s_h = \left(\frac{4}{\pi r_1^4}\right)\left(\frac{\pi r_2^2 x^2 mg}{2}\right)(r_1)$$

$$= \frac{2r_2^2 x^2 mg}{r_1^3}$$

FOR MINI-MEN ON PLANET G

$$M_m = \pi\left(\frac{r_2}{G}\right)^2\left(\frac{x}{G}\right)(mGg)\left(\frac{x}{2G}\right)$$

$$= \frac{\pi r_2^2 x^2 mg}{2G^3}$$

$$I_m = \frac{\pi}{4}\left(\frac{r_1}{G}\right)^4 \quad *$$

$$c_h = \frac{r_1}{G}$$

$$s_h = \left(\frac{4G^4}{\pi r_1^4}\right)\left(\frac{\pi r_2^2 x^2 mg}{2G^3}\right)\left(\frac{r_1}{G}\right)$$

$$= \frac{2r_2^2 x^2 mg}{r_1^3}$$

* approximating the bone as a solid beam of circular cross-section

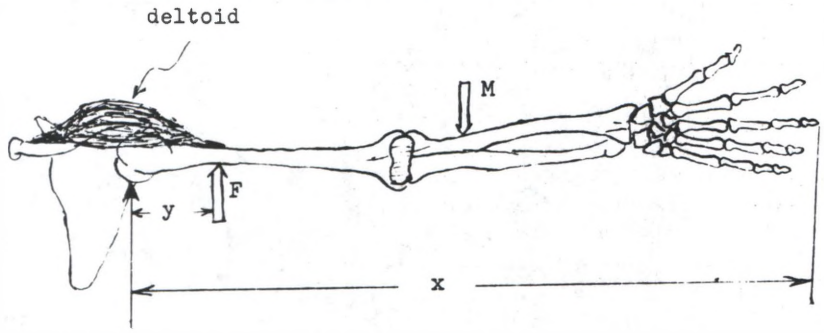
Figure 2

one quarter (i.e. 2x1/8) the strength of a human while having only one-eighth the muscle — a neat trick if it can be done.

To cite an example more directly in line with Mr. Whamond's arguments, let us re-examine the forces exerted on an outstretched arm (see Figure 2). As can be seen from the illustration, treating the arm as a cantilever beam will produce figures showing that the stresses exerted on the bones of both human and mini-man by the weight of their arms are identical, just as Mr. Whamond predicts. Please note however, that a cantilever beam is, by definition, a beam which is rigidly supported on one end only by framing into a solid wall or pier (3; 146). The fact that the arm can be raised violates this definition — another faulty analogy. Actually, the raised arm is supported by the shoulder socket and the deltoid muscle. Simple mathematics again reveals that the mini-man, having only one-eighth the muscle of a human, must exert one quarter the force required of a human simply to lift his arm (see Figure 3).

Thus, the problem encompasses more than the mini-man's ability to lift a concrete block. How is the mini-man to lift himself? By Mr. Whamond's definition, mini-men will overstress their muscles 100% by simply standing up, with or without the concrete block. Mr. Whamond will no doubt answer that mini-men can compensate for the extra weight with better muscle tone. However, speaking in terms of the limits of human strength presupposes maximum muscle development, so the mini-men still come out short. Further, calling to mind the famous Charles Atlas advertisement, what is the difference between the 90 pound weakling and the 180 pound muscleman he becomes? The argument is self-defeating. If Mr. Whamond's postulate of the need for equal stress is correct, his mini-men will need more muscle and thicker bones.

Having more muscle and bone implies a need for larger respiratory, digestive, and circulatory systems to keep pace (2; 103); but even without extra muscle and bone, their circulatory systems will need extra strength.



For the deltoid muscle to lift the arm, Fy must equal M.

FOR HUMANS ON EARTH

$$F_h = \frac{M_h}{y} = \frac{\pi r_2^2 x^2 mg}{2y}$$

FOR MINI-MEN ON PLANET G

$$F_m = \frac{M_m}{\frac{y}{G}} = \left(\frac{\pi r_2^2 x^2 mg}{2G^3}\right)\left(\frac{G}{y}\right) = \frac{\pi r_2^2 x^2 mg}{2yG^2} = \frac{F_h}{G^2}$$

Figure 3

V. PROBLEM THREE: THE CIRCULATORY SYSTEM

In his article, Mr. Whamond makes the error of stating that there is no distinction between gravity, weight, and density; stating as justification that, "A half density material is the same as a full density material in a half g field (1; 43)." His mathematics are correct, but he has the relationship reversed. Increasing gravity will make compressible materials more dense, not less. Besides, unless he is speaking of very high gravity or pressure, most solids and liquids can be considered to be virtually incompressible. Their mass density will remain unchanged, but their weight density will vary in direct proportion to gravity. This misconception was partly the source of his error in predicting the strength of a mini-man, and it causes his theory other problems as well.

In the human circulatory system, the heart uses muscular contractions to pump blood throughout the body. The heart is assisted in this action by the arteries, which also contract to move the blood along. The blood returns to the heart through the veins, which contribute no pumping action, and are basically simple tubes.

The heart and arteries must provide enough blood pressure not only to overcome the drag and turbulence inherent in the system, but also to overcome the force of gravity in supplying blood to the brain.

The pressure exerted by a standing liquid on the walls of a container is determined by multiplying the weight density of the liquid by the height of the liquid above the point in question. For example, if a liquid with a weight density of one ounce per cubic inch is poured into a container to a depth of thirty-two inches, the pressure the liquid exerts at the bottom of the container will be two pounds (i.e., 32 ounces) per square inch, and the pressure exerted sixteen inches from the bottom will be one pound per square inch, regardless of the size or shape of the container.

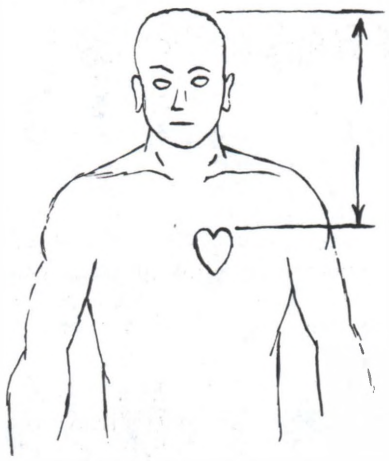
Therefore, the heart must generate a blood pressure greater than the weight density of blood multiplied by the vertical distance between the heart and the brain.

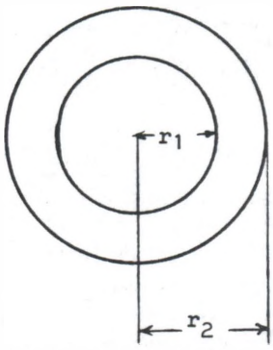
When speaking of high-g forces, this capability cannot be taken lightly. A man deprived of sufficient blood flow to the brain will quickly lapse into unconsciousness. It is in this respect that humans are most vulnerable in high-g situations. The "G-suits" and "acceleration couches" Mr. Whamond speaks of (1; 39) are primarily designed to overcome this problem; the acceleration couches by lowering the vertical distance between the heart and the brain, and the G-suits by squeezing the arms and legs to increase blood pressure. These methods have their limits however, because the pressure the circulatory system can withstand without rupturing is not very high.

The problems this poses for Mr. Whamond's mini-men are considerable. Since the weight density of blood will be doubled on Planet G, the mini-men will have to generate blood pressure equal to a human's (i.e. 2x1/2) with a heart containing only one-eighth the muscle tissue of a human heart. In addition, this pressure must be contained by veins and arteries having only one half the wall thickness of human veins and arteries (See Figure 4).

VI. CONCLUSION

What then, do the foregoing objections demonstrate? Simply this: Mr. Whamond's mini-men, as he describes them, are not likely to exist. Granted, their bones may be capable of withstanding the stresses of high gravity, but their soft tissues will not. Since many humans already





Cross-section of a vein

Where: b = the mass density of blood
t = the thickness of a vein's wall
P = the blood pressure needed to pump blood from the heart to the top of the head

FOR HUMANS ON EARTH

$P_h = bgx$

$t_h = r_2 - r_1$

FOR MINI-MEN ON PLANET G

$P_m = bGg \frac{x}{G}$

$= P_h$

$t_m = \frac{r_2 - r_1}{G}$

$= \frac{t_h}{G}$

Figure 4

suffer from bad backs, varicose veins, heart trouble, and the like, such problems would be even more widespread among the inhabitants of Planet G.

It seems more likely that, assuming the inhabitants of a high-gravity planet are humanoid and constructed of the same tissue as Earthmen, such creatures would be endowed with both more muscle in proportion to height and thicker bones in proportion to mass than the average human. In other words, they would resemble the "gorilla-muscled superman" stereotype that Mr. Whamond so speedily rejected.

As to their average height, who can say? We share this planet with Pygmies and Watusis, yet all races of man have presumably evolved to adapt to Earth's environment. Inhabitants of high-gravity planets could be expected to evolve and adapt to their own environments as well. They could conceivably be the size of elephants if their environment so demands.

As to the existence of small, humanoid UFO occupants; whether such a concept is ridiculous or not depends on your personal faith in the evidence. I happen to believe they are possible, although I must admit that irrefutable proof of their existence has yet to be shown.

Does this mean that Whamond's high-gravity minimen can't exist? Not at all! They either exist or they don't, and no amount of logic, argument, or rationalization can add or detract one iota of existence. They are, however, less likely to exist than Mr. Whamond believes; and, if they do exist, it is for reasons other than those Mr. Whamond has given.

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TED ROTH: November 25, 1920 - December 15, 1977

SITU mourns the passing of Dr. Ted Roth, Assistant Director of the Baltimore Zoo and a member of SITU's Scientific Advisory Board.

PARADOXICAL ORTHODOXY IN CANCER RESEARCH

By John Ott, Sc.D. (Hon.)

B-1 bombers? No! Airplanes are out of date. No longer orthodox. Cruise missiles now.

What would Billy Mitchell have thought about that after all the trouble he had in trying to convince the Army to try using airplanes to drop bombs on the enemy?

Streetcars? When I started working as a security analyst in the trust department of a large Chicago bank, streetcar bonds were on the approved list of securities suitable for the investment of widows' and orphans' trust funds. They were sound securities with a good outlook for future earnings. Recommended highly by our Senior Trust Investment Committee.

What do you imagine would have been their response if I had submitted a report criticizing the future outlook of the Chicago Streetcar System and talked about men going to the moon in a rocket, and back to earth again, landing a couple of robot laboratories on Mars to study soil samples for signs of life, and sending back color pictures and detailed information and talking with the men on the moon and—Enough! Get rid of that lunatic, fire him at once. He should be locked up for good! At that time the expression "crazy as talking about man ever going to the moon" was used to convey the ultimate of the utterly ridiculous and the impossible.

Then what about suggesting that wearing tinted contact lenses mught cause cancer? Well, that might need a little explaining too. On the face of it, it seems almost too ridiculous to waste the time, money and effort to bother with when there are so many other important and more orthodox areas of cancer research to be investigated.

Our Senior Trust Investment Committee was comprised of experts, men who had spent years studying the problems associated with investing money. They were experienced in all kinds of investment securities. They had followed the development and progress of the Chicago Streetcar System since its inception and were thoroughly familiar with both its management and operation. They had all graduated from college with top honors and degrees. Certainly it would not be prudent to ask a streetcar motorman or mechanic anything about running the company.

There have been stories about the office boy becoming president, but these are exceptions to the general rule and office boys certainly should not be depended upon for making management decisions until they *do* become president. This is just the way things are, or the way the ball rolls. This is the orthodox way to run a bank or a streetcar system or anything else — including cancer research.

Like our Senior Trust Investment Committee, it is quite logical that doctors with the highest honors and degrees should be on the Medical Review Committees. They know the medical literature on cancer backwards and forwards. They have virtually memorized it; and nothing about tinted lenses, sun glasses, or artificial light was ever mentioned in medical school. Very little was ever mentioned about nutrition, either. So why get excited about tinted lenses and light when there are so many other possible causes of cancer constantly being reported by orthodox researchers in the press all the time? So many things we eat, breathe, or otherwise come into daily contact with are now hazardous to our health. It has almost reached the point where the normal life process is hazardous because ultimately you are going to die. Of course the real question is when — at what age: ten, sixty-five, or one hundred and ten?

But why should there always be such antagonism and opposition against any and all new ideas unless they can be supported by the literature? It seems to me that one serious fallacy in our present approach to orthodox cancer research lies in the fact that the answer may not be in the literature. We may have to look elsewhere for it. If it were already there, then some of our most scholarly students would surely have found it by now.

Memory and the photographic type of mind are unquestionably important qualities; the person with the best memory, who may come with all the right answers in the final college exams may, however, lack the aggressiveness necessary for a new approach to do things differently. Maybe the answer, when eventually found, won't be exactly orthodox within present day thinking.

Think of the humiliation and disgrace under present day standards if an educated expert did try something new and different and was wrong, and lost his job as a result of making such a mistake. Just like the security analyst, the researcher's job is much more secure by being conservative and doing nothing that might rock the boat.

"Serendipity" and "empirical" are words that should be taken more seriously and not just shrugged off as a joke. Webster's dictionary defines "serendipity" as "the finding of things not sought for" and "empirical" as "relying on experience or observations alone without proper regard for considerations of systems, science and theory."

Too many scholars with an excellent memory and photographic type of mind lack the initiative or ability to fully apply their knowledge or are afraid to speak their minds for fear of criticisms and being ostracized by their colleagues.

When NASA started the space program none of the transportation experts on our trust investment committee were asked to help design the rockets. What do you think a symphony orchestra composed of all the top music critics would sound like? Yet that is just the kind of music we are getting from the peers on the cancer review committee. You will seldom find a historian making history.

Until the answer to cancer is found, how can anyone be certain that tinted lenses or any other hypothesis is

wrong? Too many scientists are ultra-conservative in their own views as to what may cause cancer, yet speak out unequivocally and confidently in stating what could not possibly be a contributing factor. What is desperately needed is better communications and more open discussions on the subject, while bearing in mind Webster's definition of "research" — "a critical and exhaustive examination having for its aim the discovery of new facts and their correct interpretation, the revision of accepted conclusions, theories or laws in the light of newly discovered facts, or the practical application of such new or revised conclusions, theories or laws."

Many of the great discoveries of the past have come about accidentally; but whether accidental or the result of long studious hours of work, the results always seem to meet resistance by those reluctant to give up the old ideas for new. There is still a society for preservation of the belief that the world is flat.

TINTED LENSES AND CANCER: EMPIRICAL SERENDIPITY

Fifty years ago, when Charles A. Lindbergh made his solo flight in a single engine airplane across the Atlantic to Paris, I made my first time-lapse pictures of an African violet and apple blossom. I borrowed the works from the kitchen clock in order to make an automatic timer and began taking single frames on a moving picture film at regular intervals. The effect was a flower bursting into bloom on the screen in a matter of only a few seconds. Later, I expanded my operation to include photographing many different flowering plants — whatever happened to be coming into bloom at the time. Some did bloom quite normally and I accumulated a sequence of time lapse pictures of flowers which I showed to our local garden club and other similar organizations.

However, some plants didn't cooperate and refused to bloom; these I would just discard before trying something else. This I did until my hobby grew to the point where I was asked to make many, if not most, of the time-lapse pictures for Walt Disney's nature films, including *Nature's Half Acre* and *Secrets of Life. Then* when a flower refused to bloom I had to try to figure out *why* in order to follow the script.

The first problem with any possible scientific significance came in trying to photograph the growth of a pumpkin from the emergence of the first shoot to the maturity of a pumpkin for the film *Secrets of Life*.

I didn't get any pumpkins, but learned that a pumpkin is a monoecious type of plant. That is, it produces both staminate and pistillate blossoms on the same vine. I found that all the staminate blossoms developed to large healthy specimens, but all the pistillate blossoms with the little embryo of the pumpkin right under the blossom would dry up, turn black, and drop off the vine.

I had a good picture of a tomato turning a bright red color, but since this particular sequence had to tie into the story of Cinderella's Chariot, a tomato simply would not do.

I consulted a number of horticulturists, botanists, and just plain farmers who grew pumpkins, but no one had ever experienced this kind of situation before and therefore had no real suggestions as to what might be wrong. The soil tested out O.K. and the plants looked perfectly healthy; but all the pistillate blossoms would start to grow and then, at an early stage, would all dry up, turn black and drop off the vine.

The situation was getting desperate. Walt Disney needed this sequence badly, so I agreed to try it again the next year. I was doing the project under a skylight in my ivory cellar (basement studio) and supplementing the restricted daylight with two large fluorescent fixtures. The lights were old and beginning to flicker so I bought some new tubes and started over again. To my amazement, this time all the pistillate buds developed fully and the staminate buds all dropped off — just the opposite from the previous year. In checking everything I could think of, I found that the first year I had happened to use cool-white fluorescent tubes, which are strong in the yellow-orange part of the spectrum. The second year, without asking for any particular kind of tube, I had just happened to get daylight white, which has more blue in it. After completing the pictures for Disney, I continued to experiment with the different fluorescent tubes and found I could obtain 100% staminate or pistillate blossoms on a pumpkin vine by simply supplementing the somewhat restricted daylight with either cool-white or daylight white fluorescent.[1]

Soon thereafter I was asked to assist in taking time-lapse pictures of the development of fish embryos in the Department of Biology at Loyola University in Chicago. After the project was well underway I suggested placing some of the guppies, which bear live young, under cool-white and some of the others under daylight-white fluorescent. (The sex of the guppies can readily be determined by the development of certain coloration in the males as the fish mature.)

The results of this experiment were quite significant. The professor in charge advised that this time all the guppies under cool-white appeared to be females considerably past the time when any male coloring should have normally appeared. However, at a still later date he advised me that approximately 20% of the guppies showed faint male coloring that never did fully develop.[2] It was not feasible to do any autopsies at the time to see what this mixed-up sex situation really was.

A story about the effect of light on the sex of the pumpkin blossoms and guppies appeared in the press and I received a letter from a chinchilla breeder advising that this growing industry was encountering a major problem in obtaining enough female chinchillas for breeding purposes. Chinchillas kept outdoors produced approximately 50-50 males and females.

Generally speaking, the chinchilla breeders were using the same established procedures for breeding mink, which as cold weather animals can tolerate extreme cold winter temperatures. It was also thought that the cold temperature would produce better pelts earlier in the season than in the case of animals kept indoors.

Experience soon indicated that the temperature did not control the development of heavier winter fur and that the chinchillas, being native to a more temperate climate, could not stand the extreme cold. (It is now known that the seasonal changes in the length of daylight and darkness triggers the onset of the heavy winter fur as it also times the migration of birds, the hibernation of bears,

and the mating season of just about all animals except primates. The poultry industry routinely uses artificial light to lengthen the daylight periods, especially in the winter time, to increase egg production.[3])

The chinchilla breeder advised that when the chinchillas were, of necessity, moved indoors the sex ratio in the litters changed to about 95% or more males and it therefore became impossible to maintain the necessary number of females for breeding purposes. The cost of changing the incandescent fixtures to fluorescent (as I had done with both the pumpkins and guppies) was more than the chinchilla breeder wanted to incur, so I suggested trying daylight incandescent bulbs in the breeding rooms in place of the regular incandescent ones. Daylight incandescent bulbs use a blue glass to cut down on the high ratio of red and infrared in the regular incandescent ones. The lights were not installed until ten days after mating had occurred and the same parent animals that had been consistently producing approximately 95% males in the litters under the regular incandescent bulbs now produced 95% females, which is contrary to the long-established X-Y chromosome theory.[4] Daylight incandescent bulbs are now in world-wide commercial use by chinchilla breeders to increase the number of females in the litters.

After making these observations, I decided to build a small animal laboratory out in the back yard and experiment in keeping various laboratory animals under different colors or wavelengths of light on a more controlled basis. This was an entirely new experience for me; but through several doctor friends I was able to get some qualified laboratory animal technicians to help set up the necessary scientific controls and generally supervise the experiments.

In our studies, the most significant abnormal conditions were found in laboratory animals under pink fluorescent,[5] [6] which represents a concentration of the wavelength energy in a narrow part of the spectrum towards the red end of the visible spectrum. The animals used in this particular experiment were mice and rats, which are nocturnal in nature and do not see into the far red end of the spectrum. (The reason red lights are used in the so-called "night rooms" of many zoos is so that the nocturnal animals are more active and will therefore not sleep in a corner of their cage while the zoo is open to the public during the daytime.)

The abnormal responses in the animals under the pink fluorescent consisted of excessive calcium deposits in the heart tissue, a smaller number and lower survival rate of young in the litters, and a significantly greater tumor development or cancer, which has now been confirmed by six major medical centers,[7] plus a strong tendency toward irritable, aggressive (constant fighting with one another), and cannibalistic behavioral patterns.

It is difficult to reconcile with the general concepts of cancer research the fact that the findings reported by six major medical centers — that light influences the rate, size and number of tumors in laboratory animals — is being completely ignored by both the National Cancer Institute and the American Cancer Society.

In a recent interview by Joel Greenburg, science writer for the *Miami Herald,* Dr. Bayard Morrison, Assistant Director of the National Cancer Institute, said "No one here is involved in that kind of research. There is no built-in bias against Dr. Ott or anyone else; it's just that his proposals have not been relevant to on-going work."

The American Cancer Society had previously replied that "... while there is every likelihood that exposure to different kinds of light will affect certain physiological response in the animals, they will only confuse the issue."

To me the major inconsistency in present day cancer research is that in spite of all the "breakthroughs" and claims for improved methods of both detection and treatment, and the billions of dollars spent, the cancer death rate is continuing to rise at an alarming rate; it reached, in fact, an all-time record high last year. This alone indicates to me a need for a careful review of our present approach to the problem.

On first thought, it might be concluded that the particular wavelengths which we see as pink might be responsible for the abnormal results obtained above. However, these wavelengths are a part of the total spectrum and are present in natural outdoor daylight. Instead, it should therefore be suggested that the abnormal responses result from the wavelengths that are *missing* in the pink fluorescent light, so that certain endocrine responses are failing to function, thus causing the condition of malillumination.

Modern civilization has brought about ever more rapid changes in one of man's most important environments — light. The effects of sunlight, both beneficial and harmful, on the human skin have long been recognized. More recently, however, neurochemical channels leading from the retina to the pituitary and pineal glands have been reported.[8] [9] These master glands control the endocrine system which produces and releases the hormones that control body chemistry. Thus, the basic principles of photosynthesis in plants, sometimes referred to as the conversion of light energy into chemical energy, appear to carry over into animal life in a way which has heretofore gone unrecognized.

Life on this earth, since the beginning, has evolved under the full spectrum of natural sunlight. Recent studies have indicated specific endocrine processes (involving sensitive photoreceptor mechanisms in both the skin and the retina) are responsive to narrow bands of wavelengths within the entire electromagnetic spectrum and not just to the difference between light and dark.[10] Some of these wavelengths of general background radiation will penetrate ordinary building material as readily as visible light penetrates window glass.

If the specific wavelengths to which a photoreceptor mechanism responds are missing in an artificial light source, then this would be the equivalent of darkness to the photoreceptor mechanism; in this case there would be no response even though there are other wavelengths of light present.

Various skin and suntan lotions block certain light rays from penetrating the skin. Ordinary glass in windows, windshields, and eyeglasses filters most of the ultraviolet entering the eyes. Tinted contact lenses, deeper colored sunglasses, and different artificial light sources, in addition to industrial smog, also grossly distort the natural spectrum of light to which people are normally subject.

Much has been written on the importance of diet, exercise, fresh air, sleep, pure water, not smoking, etc. — but still our national health continues to decline. Something is

still missing and there is good evidence that the missing link is light.

Let's compare the metabolic life process of the human body with your automobile engine. Both need fuel and the quality of the fuel is important. Both need air, but your auto engine won't run on these two ingredients alone; neither will the life metabolic process. The need for an ignition system is taken for granted in your car engine. When the engine stalls because of dirty spark plugs, we recognize the need for cleaning them or for fixing whatever else may have gone wrong with the ignition system. Adjusting the carburetor or fussing with the fuel pump would be pretty much a waste of time. Yet when it comes to the metabolic life process of the human body that is about all we do. We are totally ignoring the ignition system — light.

A number of widely used drugs and medicines, including some vitamins (riboflavin) and certain constituents of foods, are known to make people sensitive to light. If the specific wavelengths to which a certain vitamin reacts are of very low energy or totally lacking in an artificial light source, then a megadose would be required to bring about a normal reaction. One major problem with conventional artificial light sources is that certain areas of the spectrum are very weak or even totally lacking while other areas of the spectrum may contain very strong peaks of energy.

If the wavelength absorption characteristics of a food or drug happen to coincide with a peak of energy in an artificial light source, then the result could be an overreaction or an allergic type response.

The food that people eat need not necessarily contain any nutritional value. Artificial flavorings and especially coloring materials,[11] because of their greater absorptive and reflective characteristics, would cause a similar abnormal reaction to excessive peaks of light energy.

The normal dose rate of just about every drug has been established for people living mostly under different artificial lights that are lacking in certain wavelengths. When these people take any of these drugs known to be photosensitizers and go out into the sunlight, it is the ultraviolet wavelengths which are usually blamed for any abnormal side effects that may occur. Obviously, the drug must be interacting with these specific wavelengths.

The customary solution to this problem is to recommend staying out of the sunlight. However, some doctors in Florida and other sunny areas are now cutting down the medication dose instead, then letting their patients go out into the sunlight for reasonable periods of time, of course taking care not to get sunburned. From all reports I have heard, these people are responding exceedingly well. This seems to be particularly true with people who work in offices under fluorescent light in the north and spend several weeks vacation in a sunny climate trying to make up for their lack of sunlight.

Needless to say, this not only emphasizes the importance of having laboratory lighting conditions under scientific control (and not just trusting them to building maintenance), but also points to the possible invalidation of all past, present, and future animal (including human) research that does not consider the intensity and wavelength distribution, as well as the periodicity, of light as an important variable. As more and more knowledge is gained regarding the importance of nutrition in relation to human health and behavior, it becomes apparent that nutrition and light must be considered of equal interacting importance.

One of the more interesting developments in medicine during the past few years has been the introduction of light therapy in place of a complete blood transfer for the treatment of neonatal hyperbilirubinemia, or jaundice, in premature babies. The use of light for the treatment of jaundice may have been practiced originally in India by mid-wives who placed unclothed jaundiced infants in the sunlight to cure them. The use of artificial light to treat jaundice can be traced back to the work done in 1958 by Dr. Richard J. Cremer of Harefield Hospital in Middlesex, England. Dr. Cremer showed that the serum bilirubin levels that cause jaundice could be lowered in infants by exposing them either to sunlight or to artificial blue light. The accepted alternative treatment for severe cases is to perform a complete blood transfusion, which in itself carries considerable risk.

In this country, Dr. Jerold F. Lucey, Professor of Pediatrics at the University of Vermont College of Medicine and a past president of the American Academy of Pediatrics, has carried on extensive work in further studying light therapy for the treatment of jaundice in premature babies.[12] Premature babies who are to be exposed to the light treatment first have their eyes covered with a blindfold as a precautionary measure. The treatment is usually for eight hours a day for five or six days.

The condition, bilirubin, results from high concentrations of a toxic waste in the blood, which the infant is unable to dispose of through its liver and kidneys. The blue light (shorter visible wavelengths) passing through the tissues converts the bilirubin serum into a non-toxic substance that can be easily excreted. In a somewhat similar reaction, it has long been recognized that the ultraviolet rays in sunlight synthesize natural vitamin D.

Dr. Lucey, along with his co-workers, has experimented with different types of fluorescent lights; he has recently reported that he is now using full-spectrum fluorescent tubes with added ultraviolet to duplicate the spectrum of natural sunlight more closely.

It seems to me that while the use of a strong blue light might hasten the breakdown of the bilirubin serum, that the absence of all the other wavelengths of the total spectrum might create other deficiences or side effects, especially in new born infants receiving their first direct exposure to the light environment.

The *New England Journal of Medicine*[13] mentions a new improved form of treatment for psoriasis — photochemotherapy. Both Professor Thomas Fitzpatrick, at the Massachusetts General Hospital in Boston, and Professor Klaus Wolff, at the University Dermatology Clinic in Vienna, have pioneered in orally giving their patients a drug (methoxsalen) that is specifically activated by long wavelength ultraviolet or black light. The afflicted areas are then exposed to the black light ultraviolet wavelengths in what looks something like a telephone booth.

Dr. Troy D. Feller, of Baylor College of Medicine, reported to the 120th annual meeting of the American Medical Association on a new light therapy for treating herpes virus. A certain dye that absorbs light is applied to the skin lesion which is then exposed to daylight-type

fluorescent light. This process is referred to as photodynamic inactivation.

If a particular ailment can be treated with certain wavelengths of light, then living under an artificial light source *lacking* these wavelengths might logically contribute to causing the ailment in the first place.

It is noteworthy that all the acceptable applications of phototherapy so far use blue or ultraviolet wavelengths that are so grossly missing in our artificial light sources under which modern civilization currently exists. Pink tinted lenses especially stop these beneficial wavelengths from entering the eyes, thus causing an endocrine deficiency. The recent rapid swing toward the new, more efficient, but at the same time grossly distorted pink and orange spectrum range of the new type sodium vapor lighting only raises further very serious problems concerning its effect on human health and behavior.



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ANALOGIES OF THE PROPAGATION WAVES OF THE GREAT FEAR IN FRANCE, 1789, AND OF THE AIRSHIP FLAP IN OHIO, 1897

By Andrew E. Rothovius

Unsuspected relationships between apparently unconnected phenomena comprise a prime matter of concern and interest to Forteans and Jungians alike, and can sometimes be of a surprisingly significant nature; the one forming the subject of this discussion is an outstanding case in point.

In reading "The Ohio Airship Story" in *Pursuit* (Vol. 10, No. 1, pp. 2-8), the thought struck me that it might be interesting to take the map accompanying the article and link the towns and dates of the observations of the alleged airships which appeared over Ohio during the year of 1897. The result was fascinating (see the map as reproduced here, with my notations).

The sightings did not occur at random across the state, in either space or time, but in a rhythmic progression from west to east. The first date, April 14, finds the first three sightings, when plotted on the map, forming a convex arc across the west central part of Ohio. During the next two days, April 15 and 16, the sightings move eastward into the center of the state along virtually straight but very slightly curved lines; on the 17th the sighting lines form a deep salient into the eastern third of Ohio. Then for one day, the 18th, there is a lull in the sightings, with only one in the extreme southeast corner near the West Virginia border; on the 19th, the sightings begin to retrace their path, but for the next two days there is a lack of a distinct pattern which is resumed, however, on the 22nd as a gentle curve across the north central half of the state.

The 23rd finds a retrogression to the southeast, with a line spanning almost the entire distance between the Ohio River and Lake Erie. After that, the sightings become more sparse and diffuse; no pattern can be traced, and in a few days they die out altogether. (It should be remarked that during the first four days, April 14 through 17, there was a localized area of sightings at Akron, in northeastern Ohio, which appeared to be independent of the west-to-east, the east-to-west pulsation that characterized the rest of the flap).

My first reaction to the overall pattern that thus emerged on the map of Ohio was that it militated strongly against there being any objective reality (in the sense of nuts-and-bolts hardware) to the airships. Even primitive airships, the only ones conceivably in existence in 1897, would cruise much more rapidly than the leisurely speed at which the sighting lines moved across the state — none of them exceeding 150 miles a day (and that only in the case of the eastward salient on the 17th), and most

averaging much less than that, or around 40 miles a day. (The movement of the lines is reminiscent of ripples across a body of water, suggesting that the initial impulse lay well to the west of Ohio.) These speeds are, however, consistent with the word-of-mouth spread of airship reports, each one giving rise to the next, as affected by the network of daily rural trains which then connected virtually every community of any size — and many of no size — in the Buckeye State.

I have not attempted to plot the sighting lines on a railroad map of Ohio of that period, but they would probably coincide substantially. This in itself might not be too significant, since the rail network was so dense that many of the lines would coincide by chance. However, the point is that the sightings did not cross the Pennsylvania state line to the east. Instead, they retrogressed westward for a few days before ceasing; this suggests that the Ohio farmers who did business by rail, traveling between their various markets and farms, did so principally within the state. When the ripple caused by the word-of-mouth distribution of airship reports had reached the eastern third of the state it did not go on into Pennsylvania because its carriers themselves did not go into that state.

The sighting ripple therefore rebounded as from a pool wall, flowing back westward, but it had too little impetus left to cross the whole of Ohio a second time. It therefore died half-way through its journey; there was simply not enough substance behind the sightings to sustain continued reports, even though the initial excitement had been sufficient to carry the ripple across the state once.

It might be argued that there were a large number of daily and weekly newspapers published in Ohio at that time, and that it was the reports of the airship sighting in them rather than word-of-mouth which provided the main carrier vehicle. Doubtless these reports *did* spread through the press, but it is difficult to relate the extensive list of items mentioned in Mr. Eberhart's article to the sighting pattern, both spatially and temporally, as it appears on the map. I feel that newspaper reports played only a secondary role and that word-of-mouth (although not necessarily, and in fact probably rarely, by the actual witnesses themselves — instead by people who had heard the accounts second or third hand) was the principal mover, as it has been throughout human history.

Having got this far with my plotting of the sighting pattern, and meditating on whether the phenomenon involved was 1) people thinking they saw what the exciting reports were conditioning them mentally to see, 2) people seeing what some intelligence outside of them wanted them to see, or 3) people seeing what was there but which could be seen only under similar special conditions of mental stimulation, I suddenly recalled that there had been another very notable instance of extremely convincing hallucination which moved in pulsating waves across a substantial extent of territory (even larger than Ohio) and vanished as abruptly as it had begun.

THE GREAT FEAR

That other event was the Great Fear which swept over most of France between July 20 and August 6, 1789 — 108 years before the Ohio flap. (Note that its duration agrees roughly with that of the Ohio experience, the limiting dates of which were April 14 and May 11, although most of the sightings in Ohio ceased at the end of April. This suggests that mental phenomena of this type cannot, as a rule, be sustained in the general population for more than about three weeks before exhausting the original generating energy.) The Great Fear occurred immediately after the outbreak of the French Revolution on July 14 (the taking of the Bastille). Although we can be certain that the mental currents set in motion by the great social upheaval contributed to the inception and spread of the Fear, we cannot account for the Fear solely on the basis of the Revolution.

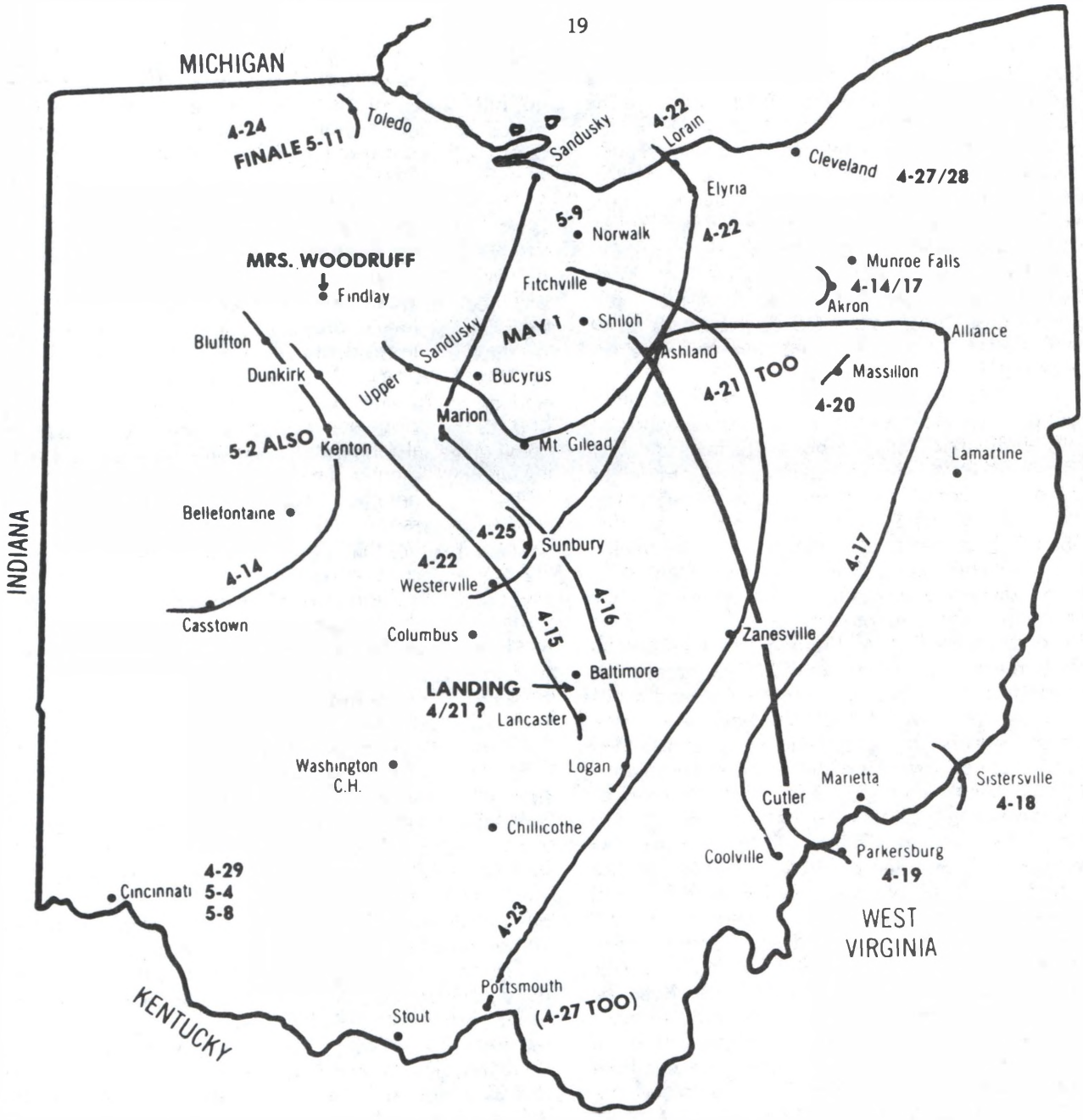
Whereas the residents of tranquil Ohio, on the eve of the advent of the automobile and the airplane, saw puzzling but not hostile airships in their peaceful skies, the French rural populace in 1789 saw, within their uneducated frame of reference, something far more threatening and imminently dangerous. From one village and town to another the rumor would spread (later on we shall consider some of the means as well as the pattern of the propagation) that a vast army of brigands was marching across the countryside, burning, looting and massacring. Often the report was vouched for by trembling refugees who had made their escape barely in time; they would describe the sacking and burning of the homes as well as the slaughter of friends and relations who had been cut down by the brigands.

And more than once great clouds of smoke rising on the horizon or a red glare at night would add support to these stories. One man said he had escaped from brigands who had dragged him into the woods where he was their forced guest at a meal which the robbers prepared over a huge bonfire; two sides of bacon filched in their sacking of the village was the main course. They also killed the local gamekeeper in front of this witness who, being perfectly familiar with the woods in which all this took place, later led a party of hastily raised militia to the spot. No sign of any bonfire or brigand feast was found, and the gamekeeper turned up alive and protesting that he had never seen any robbers.

It was the same with the clouds of smoke and the glare of fires at night: upon diligent search, no trace of these conflagrations could be found, and when those who had fled were persuaded to return home they found everything intact and the supposedly slaughtered victims alive and well.

The panic would last typically from 12 to 36 hours in any given locality; then it would disappear as everyone shamefacedly realized there was no enemy around. The Great Fear made a tremendous impression on French historians and scholars and is widely discussed in a large number of 19th Century works, all of which wrongfully convey the impression that the Fear either arose spontaneously, virtually everywhere in France at the same time, or that it spread outward in all directions from Paris as a result of the fighting at the Bastille and the attending disorders.

It is true that the mysterious brigands were usually linked by the Fear to the Paris events of the 14th — in most cases they were represented as foreign mercenaries (variously German, Austrian, Piedmontese, Spanish, Croat and others) hired by the enraged nobles to ravage and destroy the French peasantry before it could follow the revolutionary example of the Paris urban prole-



Map showing sequential nature of day-by-day reports of "airship" sightings in Ohio. Added to the sketch-map illustrating "The Ohio Airship Story" (*Pursuit*, Vol. 10, No. 1, p. 3) are author Rothovius' notations to support his contention that the reports spread across the state at railroad speed during April and May, 1897.

tariat. How it would have been possible, in those times before the existence of any form of rapid mass transportation, for the nobles to recruit and march such a force into France in a matter of a week or so after the Bastille fell, was a question that occurred to no one to ask.

Nevertheless, when the first scientific 20th Century analysis of the Great Fear was made in 1932 by the noted historian Georges Lefebvre, it was readily demonstrated that the Fear did not spread out from Paris, nor did it arise everywhere at once. On the contrary, there were six distinct waves of the Fear, each traceable to a single locality and single precipitating incident and each moving across the map of France in a steadily pulsating rhythm which averaged 4 km (about 2½ miles) an hour. This leisurely speed of progression, similar to but even slower than that in Ohio, corresponds to the word-of-mouth transmission by people on foot; the key word here is "average" — frequently, urgent messengers running or on horseback would spread the Fear at a considerably faster rate, but this would be offset by halts of up to a day in many localities before being carried to the next community. The 4 km per hour average thus indicates what is confirmed from many contemporary accounts — that the principal mode of transmission was by peasants walking from one village to another, seized by the Fear and the need to communicate it.

This last point is important: in a large number of cases it would seem that the transmitters of the Fear began their walking journey, to the weekly market or wherever it was they were going, with no apprehension in mind.

Somewhere, perhaps only a mile or two along the way, something triggered the Fear in them — possibly a puff of smoke from a rubbish fire, the rustle of animals in the roadside brush, or the offhand remark of some encountered traveler. Instantly, as it were, they saw the countryside ravaged by bands of thousands of merciless brigands, and in fully convinced alarm they would convey the dread tidings to the next village or town.

The Fear, then, was an implanted reaction; either its basic pattern was programmed into the minds of its carriers, awaiting only some triggering mechanism, as suggested above, or it was implanted directly, with an instantaneous effect, by a mode or means we are as yet unable to determine with exactness.

Not all persons were susceptible; it is recorded that in some villages, the local parson or seigneur (or whoever else was looked up to) only laughed at the tales of devastation and refused to sound an alarm or summon the militia. In such cases the Fear would by-pass the locality, re-surfacing a few miles further on. It rarely deviated more than a short distance to either side of the track it was following, and would always return to it after any temporary diversion. Sometime it branched, each branch moving out independently.

The intensity of each of the six currents of the Fear varied, which is why each differed in its duration and the amount of territory covered. Toward the end of its course, each current would start to weaken. The size of the rumored brigand armies lessened, the details of the ravages were toned down, and the reaction to the alarms became increasingly skeptical, until at some point their transmission ceased.

The reader's attention is invited to the accompanying map reproduced from Georges Lefebvre's book. A few moments of close study will help disentangle the maze of arrow-tipped lines. To help with this disentanglement, I have added numbers (1 to 6) to designate the starting points (already marked with open circles on the original map) of each of the six waves of the Fear. (It should be noted that the areas left white on the map indicate those parts of France where the Fear was experienced; but it should also be understood that between the arrow-lines there were strips of countryside that remained unaffected as well. To have further cross-hatched these narrow strips in the same manner as the large areas of France where the Fear did not appear would have made the map impossibly complicated. Also, the four pockets of darkly cross-hatched areas indicate where peasant revolts, against the nobles and landowners, had broken out *before* the Fear. Lefebvre wished to show that, contrary to some historians, the Fear did not originate in these revolt areas or even on their borders; in fact, it did not penetrate a single one of them.

The first wave of the Fear started at Nantes on the lower Loire (Area 1 on the map, a little more than halfway up the left border) about midday on July 20, and was initiated by the rumored approach of a body of government troops coming to restore order in the town (there had been disturbances there following the news of the Bastille). The wave moved southeastward, rather more slowly than the average km/h, across the bocage (hedge and pasture) country of Poitou. At Cholet it branched into two tracks, parallel to each other, and then dissipated on the afternoon of the 23rd. It was at its peak on the 22nd, at La Chataignerie, where it disrupted the rural church feast of the Madeleine. This wave's distinguishing feature was the rapid transformation, in the minds of the transmitters, from government troops (actually there were none even of these) into ferocious foreign brigands.

The second wave originated on the following morning (the 21st) near La Ferte in the province of Maine (marked 2 on the map), more than 200 km from Nantes, and totally uninfluenced by the first wave. It spread, in the form of a pinwheel, to the south, west and north (see arrows on map), the strongest current being the northward, which on the 23rd produced eyewitness accounts of the towns of Dreux and Verneuil having been burned, sacked and looted, though not before the local militias had killed 4000 of the brigands. (The towns were, of course, found to be quiet and unharmed when the refugees returned a day later.)

The northern and western currents of this second wave dissipated late on the 24th; the southern current, moving through Tours and Blois in two parallel streams, did not exhaust itself until the 27th, thus giving it a six-day life. Lefebvre was unable to discover the initiating incident for the second wave.

The third wave of the Fear originated in the early morning of the 23rd, west of Lons in eastern France near the Swiss border (marked 3 on the map), and it was initiated by a party of militia returning home at night from having investigated a reported disturbance at a chateau near Louhans (see map); they decided to fire off the ammunition in their muskets rather than go through the bother of unloading them. This was done on a deserted country road, but the noise of the shots aroused the attention of several peasants and within moments they were spreading the Fear across the countryside. (There is no evidence that any word of the first two outbreaks, less than 72 hours earlier, had yet reached eastern France.)

This third wave traveled only a short distance to the north, then recoiled from the Saone and the Voges massif; but to the south it went all the way to the Mediterranean and the Maritime Alps before finally dissipating on August 4, after a life of 12 days, at Salerne in southeast Province, not far from the Piedmontese frontier. It was only in this wave that the Fear was transformed into revolutionary action: in some parts of the southeast, the chateaus of the nobles were attacked and burned in retaliation for their allegedly having instigated and levied the incursion of the brigands, who here were principally "seen" as Piedmontese (Italians) from across the Alps.

The fourth wave of the Fear erupted at Estrees, north of Paris (spot marked 4 on the map), on the evening of the 26th; it was initiated by a violent altercation between some poachers and the gamekeepers of the local seigneur. Although it penetrated the northern outskirts of Paris, its main thrust was northward in the direction of the Straits of Dover. This short wave had a life span of only three days, being almost spent when it arrived in Boulogne late on the 29th. Curiously, it did not penetrate the area immediately adjacent to the Flanders frontier, where a peasant uprising was already in progress and emigré nobles were known to be recruiting and massing forces on the Flanders side for an attempt to regain power in France.

Lefebvre's fifth wave of the Fear (I have used his num-



Map showing movement of currents of the Great Fear, from *The Great Fear of 1789*, by George Lefebvre, translated by Joan White, © 1973 by Pantheon Books, a division of Random House, Inc., NY.

bering throughout) broke out west of Troyes (number 5 on the map) in Champagne on July 24, actually 2 days earlier than the fourth wave. It started from a herd of runaway cattle whose rustling sounds inside a patch of brushwood were taken to be a band of brigands hiding under cover of the leaves, and very quickly the Fear was spreading, full-blown, in several currents that moved generally southward but diverged to the east and west on either side (one of which was moving northwest when it entered the southern outskirts of Paris). The general lifespan was six days, although that of some of the currents was somewhat less; the southernmost one merged, on July 30 near Bourbon, with the great sixth wave in the southwest of France.

This fifth wave produced one of the most circumstantial and detailed eyewitness stories of the brigands at work; refugees from Longjumeau, a town southeast of Paris (not shown on the map, but near Fontainebleau) told of entry by armed cavalry wearing the uniforms of Austrian hussars who proceeded to sack and burn the principal buildings. Needless to say, when militia sent to the rescue arrived they found the town quiet and undisturbed.

The sixth and last wave was the greatest; starting at a spot (marked 6 on the map) near Ruffec in west-central France, on July 28, it fanned out in pinwheel fashion (but more strongly to the southeast) to cover all the southwest and south-central provinces, reaching the Pyrenees frontier with Spain on the 6th of August, as it was fading out. Its duration was thus nine days, during which it moved at a somewhat greater speed than the average 4 km per hour. The initiating incident was the appearance of four or five "Brothers of Mercy," as they were called — licensed beggars and solicitors who were collecting alms for the benefit of French captives of the Barbary pirates. When these were seen to disappear into a patch of woods instead of continuing along the highway, the conclusion was jumped to that they were spies of the brigands in disguise. That was all that was needed to touch off the Fear's widest rampage of all.

SIMILARITIES

Comparing now the map of France in 1789 to the one of Ohio in 1897, we see that the Fear's initial wave — as in Ohio — entered from the west; the succeeding second and third ones were progressively further to the east (almost to the eastern limits of France); then the three following ones retrograded westward, almost back to the

point of origin. This follows a similar pattern as in Ohio, and indicates very strongly that some related phenomenon is involved behind surface events.

It was suggested earlier in this presentation that the Ohio airship flap was propagated largely by word-of-mouth along the dense rural railroad network of the 1890s. We have seen how the French Great Fear was also spread by word-of-mouth, although the six initial sources appear to have begun independently of each other; certainly this is true for the first three, and may apply in all six cases (it is only marginally possible that reports of the first three waves set off the final three). In other words, the impulse for each wave was implanted into the minds of the persons involved from *outside;* it may be that, if we had a more thorough knowledge of the spread of the Ohio flap we would find that the first sighting in each case was an implanted one. Or it may have been the other way around: word-of-mouth reports could have suggested the first sighting, then implantation would carry it along the lines of propagation which appear on the Ohio map.

Many other points of similarity between the 1789 and 1897 occurrences are evident. The manifestations — airships in one case, brigands in the other — were actually seen by persons of normally credible character and sound minds, and were consistent (though admittedly at an extreme limit) with what their respective frames of reference would admit as being physically possible. Physical effects and traces, though apparently witnessed at the moment, could not be found. Natural or accidental phenomena were known triggers for the French events, and quite possibly figured in at least some of the Ohio events (the four or five "Brothers of Mercy" who touched off the sixth French wave may not have been real persons, but rather mental constructs like the "Men in Black" so familiar to present-day UFO and Fortean investigators).

What the *purpose* of the manifestations was must remain conjectural. Though the *mode* of the Phenomena appears to have been the same (or at the least very similar) we cannot assume that the same *cause* was responsible in both cases. Ohio can be interpreted as the mass precognitive hallucination of an invention then very near actual realization; the French Fear is less convincingly interpretable as a similar precognition, on a mass scale, of the Reign of Terror into which the Revolution would degenerate within a few years. The Napoleonic Wars that grew out of the Revolution would end in 1814 with an invasion of France by Russian, Austrian and Prussian armies which were to commit actual ravages, fulfilling in part at least the insubstantial horrors of the Great Fear. Yet this was to be limited to northern France and would not affect more than about 15% of the total area which experienced the Fear.

We might perhaps see in the Great Fear an expression of the realization the part of the Jungian "group soul" or collective European (and especially West European) unconscious, that the era of limited warfare fought by small professional armies, which characterized the 18th Century, was ending; and the age of total wars, involving entire national populations, was about to begin. In any event, the Great Fear stands as one of the most extraordinary mental phenomena ever recorded.



MIND OVER MATTER

By T. B. Pawlicki

KVOS-TV, Channel 12, Bellingham, Washington, broadcasts a children's educational series under the title, *More.* Around June, 1977, the subject of the lesson was the Plate Flutter experiment. A powder is sprinkled on a vibrant surface and exposed to more or less tuned sound. The sonic wavelengths which coincide fundamentally and/or harmonically with the dimensions of the particles of the powder cause the particles to vibrate sympathetically. These vibrations carry the powder with them, making the structure of the sound energy visible. The Plate Flutter experiment, a child's toy, is a scale model illustrating the way the entire universe works.

Untuned, unfocused sound can be regarded as a perfectly random flux of vibrations from all directions. Where vibrations traveling in opposite directions meet with a coincidence of frequency and phase, a standing wave is formed. The nodes of these standing waves occur where the powder accumulates during the Plate Flutter experiment. In order to make a standing wave on a plane surface, frequency and phase coincidence must be perfectly opposed on one and/or two axes of the resonant waves. As we know, sound waves are three dimensional, and three-dimensional standing waves are created when frequency and phase coincidence are perfectly opposed on the three axes of wave rotation. But the Plate Flutter experiment is always performed on a plane surface, so we must remember to see the vibrating plane as a two-dimensional cross-section of an invisible, vibrating volume.

Whenever this experiment is performed, the demonstrator always deceives the observers by directing attention to the standing waves. The importance of this experiment is not in the standing waves, which are geometrically beautiful, but in the invisible *radiant waves.*

Standing waves, formed by axially opposed vibrations which are not perfectly phase coincident, *move.* On each cycle of vibration, the movement is equal to the phase displacement of the specific wavelength. The net velocity is equal to the proportion of radiant velocity divided by phase displacement. The limiting velocity is radiant velocity, at which point all phase coincidence is eliminated, and the standing wave disappears entirely.

As phase coincidence is converted to velocity, the observer will see the extension of the standing wave, now a *moving standing wave,* contract along the axis of travel. This is the Fitzgerald Contraction of Einstein's Theory of Relativity demonstrated right before the eyes! When phase coincidence is eliminated along one axis of opposition, the standing wave contracts to nothing on that axis

and disappears at radiant velocity. This illustrates how matter is converted to energy at the speed of light.

The standing wave structures which are visible are created by the radiant-wave structures which are invisible. The motion of the standing waves is determined by the dynamic structure of the radiant waves. We can see the radiant energy moving the standing waves in the same way that force fields accelerate material bodies in space. We can infer from this model that field vectors are created by radiant energy, field energy is a function of wavelength, and field acceleration is a function of phase incidence. We can also see that no space can be detected except as the field it contains. Therefore, *field is identical to space.* It is clear, too, that material objects are an integral part of the field.

As we observe the pattern of the powder form and dissolve while the harmonics of the sound progresses through its "rounds," we can see how radiant energy is transformed into material and material is transformed into energy in a continuous cycle. This is the Yin and the Yang of it.

If the field is properly tuned, the standing-wave pattern can be made to assume the form of a living creature. People who have studied the Plate Flutter model have actually duplicated the cross-sections of simple life forms. The pattern can be made to move in response to its field like an animal moves in response to signals of its environment. Now, *movement is identical to behavior.* Intelligence can be determined objectively only as behavior. Therefore, *behavior is identical to intelligence. Intelligent behavior is identical to consciousness. Consciousness is identical to mind.* Therefore, *consciousness is identical to space. Space is defined by frequency. Material is created* OF *space.* Therefore, *material is the standing-wave phase of mind.* Because each of these terms is equivalent to any of the others, you can make the most amazing discoveries by continuing this permutation of definitions.

As the standing-wave structure acquires velocity, the phases of its constituent vibrations rotate out of synch in direct ratio to acceleration. This shows that *as a material object acquires velocity it is converted into a mental object.*

You may wonder what this had to do with Flying Saucers. Well, if you refer to my first article on the engineering of antigravity ("How To Fly A Saucer," *Pursuit*, Vol. 10, No. 4), you will recognize the Vortex Drive as a model of a three-dimensional standing-wave generating a field of its own which encloses the entire craft. A practicable commutator to rectify the precessional acceleration will have the effect of compressing the extension of the standing-wave structure along the axis of travel by pushing opposing phases out of synch. The compression is in direct ratio to craft velocity. By engineering field vectors in this way, the Flying Saucer becomes a model of an electron propelled by the ambient field. Because it receives its energy for propulsion from the universal gravitational field, its energy is infinite and so is its potential velocity. The only fuel required is the amount necessary to maintain the Vortex Drive in tune.

As the Saucer's velocity increases, its mass decreases, so the faster it goes, the faster it accelerates; a Saucer could accelerate to the speed of light almost instantly. We can observe the analogue in the Plate Flutter model as standing-waves accelerate to radiant velocity within a blink of the eye. At the speed of light, the compression of the Saucer along the axis of travel is total; it is converted from a three-dimensional matter wave into a two-dimension, massless photonic structure. It has changed from a material object into a mental object. Brad Steiger ... Curt Sutherly ... are you there?

How is it that Einstein missed this? All of Einstein's equations are true when energy from one field is applied to a material structure of another field in order to generate an acceleration of material. What Einstein failed to perceive is that each field in the universe is a separate frequency-defined space. If the field of the material structure is engineered directly, the signs of the operations are reversed and the effects are opposite to the ones calculated in Relativity.

I am not enough of a mathematician to prove or disprove the equations of Relativity. But I am enough of an observer to recognize that the Plate Flutter experiment is a mechanical model of all the operations described by Relativity. I have never seen a Flying Saucer in real space, and I never expect to see one. But I can observe how the standing-waves in the Plate Flutter model duplicate the operations of Flying Saucers.

Future researchers and observers must decide whether the scientific authorities are correct when they prove that UFOs *cannot* possibly exist, or whether what I offer may be a reasonable explanation as to how UFOs *can* exist.



THE COSMIC HOLOGRAM

By T. B. Pawlicki

Take a converging lens, the lens off your camera or a simple reading glass. Hold it so that it casts an image on a suitable two-dimensional surface (such as a piece of white paper).

We are in the habit of thinking that the image cast by a lens is two-dimensional because we always use a two-dimensional surface to make it visible, but the image cast by a lens is really three-dimensional. (Actually, it is four and five-dimensional, but that is another story.) You can prove that the cast image is three-dimensional by moving the card along the axis of projection to bring the third-dimension into visibility, plane by successive plane. This simple and self-evident demonstration proves that within the focal cone of a lens, there exists a three-dimensional image of half the visible universe, from here to infinity, insofar as the constituent radiation can be transmitted and focused by the glass. That is an awful lot of information in a handful of space.

But radiation goes through a lens both ways. On the other side of the lens, there is a three-dimensional image of the other half of the universe.

You may object, of course, arguing that the angle of view of the lens is considerably less than 180°, but this demonstration is adequate to prove the principle: there are lenses that cover a field of 180°.

Now, move your lens about. You will find no matter where you hold a lens, it will always cast an image of the entire visible universe, plus some of the invisible universe. The only difference produced by changing the position of the lens is to change the *angle* of aspect of the image. You know all about this already; so what else is new?

Well, the radiation being brought to a focus by the lens *exists at the lens*, regardless of the origin of the radiation. This means that every millilitre of space contains all the information needed to recreate an image of the entire universe. When Blake wrote of finding a universe in a grain of sand, he was telling it just like it is when you view the universe in the image cast by a microscopic sphere of silica, or a dewdrop. A structure that contains its entirety in its every part is a hologram. This simple experiment, self-evident to a child, proves that the physical universe is a hologram of cosmic proportions.

If every part of the universe contains information of the entire universe, then, for example, all knowledge is already contained within our brains. It is necessary only to bring the proper vibrations to a proper focus in order to retrieve any information we want.

Radiation filling all of space contains the information necessary to construct everything in the universe. What the lens does is to rotate the angle of radiation within a limited space. There are, of course, some critical differences between the image cast by a lens and a holograph. To begin with, the universe is constructed of vibrations at all frequencies. The lens transmits little more than the visible radiation. The universe is composed of vibrations coming to foci at very specific points. The lens does not bring all wavelengths to a common focus, so the critical focal relationships are lost. Finally, the universe is composed of vibrations from all directions. The lens accepts radiation from a limited angle only. In order for a lens to create a proper holographic duplicate of the universe it would have to bring all wavelengths from all directions to a common focal point. If this operation is performed, you will remember from the Plate Flutter experiment that a three-dimensional standing wave will be formed in space. A three-dimensional standing wave is a material atom. This is why $\lambda = \frac{mc^2}{h}$.

We have here proof that anything in the universe can be brought into existence at a specific time and place by rotating the constituent frequencies until they come to a focus from all directions. This may be how Jesus and Elijah created the loaves and fishes to feed the multitudes. If you refer again to the Plate Flutter experiment, you will understand that the rotation of radiant field vibrations until they come into focus as material standing waves is actually the creation of matter out of mind. Now, if one chose to call the universal intelligence behind the universal field "God," then we can see one explanation as to how God created Heaven and Earth, man and woman, and little green apples in the summertime. The observable fact that the human brain is capable of intentional interference with the natural course of phase rotation of field energy to create entirely new chemicals may represent evidence for man's potential divinity.

In recent years, I have been told, Europe has marketed a toy that transmits electronically generated vibrations through a pool of water. Where the vibrations come to a focus, phase-opposed on one or two axes, a standing wave is formed; and it rises above the surface of the water like an atom projects from the field of space. When the phase angles of the constituent vibrations are changed, the standing wave moves. The standing wave can be made to move at any velocity up to the resonant velocity of water. You will recognize the mechanics involved is identical to the Plate Flutter experiment. If the waves are so tuned, the standing wave can be made to disappear at one location and to reappear instantly at another without traversing the intervening distance — the velocity of this exchange being the speed of light. If the radiant waves of the energy field are properly tuned, the standing wave can be made to assume any structural configuration.

Given proper tuning, the standing wave created by the universal field may also assume the structure of a Flying Saucer and its crew. The radiation generated by the Vortex Drive will function as a field lens that rotates the phase of universal radiation and causes the Saucer to dematerialize here and rematerialize somewhere else. If you refer to the Vortex Drive of my article, "How To Fly A Saucer," (*Pursuit*, Vol. 10, No. 4) you will see that the commutator of the precessional accelerator actually functions as a rotator of phase, albeit a rather primitive one. A more sophisticated Mark IV Flying Saucer would generate a field capable of bringing every molecule of the ship and its contents into coherent resonance so that all atomic particles will rotate through phase in unison. Any departure from absolute coherence will cause the Saucer to explode like a nuclear bomb.

The analogy drawn earlier between a Flying Saucer and an electron also serves to prove that rotation of phase in this manner is possible. When an electron jumps from one atomic orbit to another, it is not seen to traverse the interorbital distance in a measureable passage of time. The electron simply disappears instantly in one orbit and reappears instantly in the other. Accepted physical equations deny the possibility of a Flying Saucer. You see, for an electron to jump from one orbit to another in no time at all, its velocity must be infinite. If its velocity is infinite, then its mass must also be infinite. If its mass is infinite, the electron cannot be accelerated. So the Quantum jump, the basis of modern physics, is impossible. Obviously, there must be some wooly thinking at the highest level of physics, and the authorities are doing the best they can to hide the contradictions. What really happens is that a change in energy level causes the electron to change frequency. The change of frequency demands different dimensions of the standing wave orbit. The transformation is accomplished through a rotation of phase. While the phase rotation is taking place, the electron becomes a massless, two dimensional and undetectable structure moving at the speed of light from one orbit to the other. Time stops for the electron in rotation, and the interval of passage is too brief to be detected by any instrument; thus the electron is measured as disap-

pearing in one orbit and reappearing instantly at the other. The Flying Saucer may represent an electron engineered on a scale large enough to carry a payload.

The demonstration with the lens shows us that a Flying Saucer can be rotated through phase into agreement with the light of a star as it is received here and now. In this manner the Saucer disappears to the here and now, as a material structure.

To the Saucer, it is Earthport which disappears, and the star which materializes instantly. The speed of the transport is the velocity of phase rotation, and this is measured as an angular distance around the circumference of the Vortex Drive Field; and this angular velocity is the speed of light around the field perimeter. If the stellar destination happens to be Sirius, for example, the Saucer materializes near Sirius as the star existed 7½ years ago. A Mark V Flying Saucer, therefore, is a *time transport*. The fact that the UFOnauts arrive at Sirius 7½ years before they left Earthport is of no more consequence than a passenger on the Concorde arriving in New York before he leaves Paris. The return trip brings the Saucer back to Earth after a time interval equal to the time spent at Sirius.

If the Saucer wants to reach Sirius *now*, it must go to where Sirius is *now*, which is not where we see it now. The phase coordinates programmed into the Vortex Drive navigational computer must be plotted for the location of Sirius *now*. In order to reach Sirius *now*, the Saucer must traverse the intervening distance. So what happens is that the Saucer phases out of existence at Spaceport Earth and becomes transformed into pure radiant energy as part of the universal cosmic hologram. When the radiation rotates naturally through the phase angles between here and Sirius, the Saucer rematerializes. To the ship and its crew, no time at all has passed; on Earth, however, 7½ years have elapsed. To the Sirians, this makes no more difference than the time Columbus spent on the Atlantic made to the Indians.

As we proceed with the engineering of the Vortex Drive,we see that the Saucer is something more than the only way to fly through interplanetary space. The Mark V Flying Saucer is a true Star Ship possessing time transit capacity, bringing intergalactic commerce within the range of possibility.



PARANORMAL PHENOMENA: THE FIRST INTERNATIONAL CONGRESS

By S. N. Mayne

While Bob Warth, president of SITU, was attending (by invitation) a closed session of the United Nations (in which the Ambassador of Grenada read a statement from his Prime Minister, Sir Eric Gairy, requesting that the United Nations initiate a comprehensive study of the UFO phenomenon), two other SITU representatives were attending the First International Congress of Paranormal Phenomena, held in Mexico. R. Martin Wolf was invited to present his paper (see "Coherence in Chaos," the lead article in this issue). S. N. Mayne was there to cover the proceedings. Here is his report.

INTRODUCTION

On Sunday, November 20, 1977, *The New York Times* printed an article pooh-poohing paranormal phenomena as useless nonsense. The timing of the article may have been more than coincidental; on that same date, at the Maria Isabel Sheraton Hotel in Mexico City, fifteen hundred people were listening to the opening speech of the First International Congress of Paranormal Phenomena.

Dr. Salvador Freixedo, president of the Mexican Institute for Paranormal Studies, opened the Congress by stressing the three fundamental goals of the Congress: "1) to officially admit the existence of paranormal phenomena; 2) to study and divulge the advancements carried out in its investigation, and 3) to use in our daily lives all the practical results of these investigations, carried out in many cases by isolated persons without the capacity to put their discoveries within the reach of all."

"The importance of this Congress," Freixedo emphasized at the outset, "is not only that it defies science as we know it, but that authentic scientists themselves will, for the first time, be presenting phenomena which have never officially been presented before the public."

Freixedo explained that today's society is faced with the dilemma of transcendentalism or intratranscendentalism: Does all paranormal phenomena emanate from physical energies as yet unknown to man and/or from human psychism, or do they possibly come from other intelligences, not necessarily human? Such diversity exists among those studying paranormal phenomena. The researchers who pursue the scientific viewpoint refuse to admit to anything that does not emanate from man or from unknown physical energies. The researchers who do not pursue the scientific viewpoint are more willing to admit there are other entities which interfere with man's life in many ways, depending upon the state of evolution of these entities. Those who would defend the non-scientific theory, Freixedo continues, invoke an infinity of facts from all eras of the history of humanity that cannot be explained by science. If they are right, men suddenly become pawns on a gaint chessboard where before they were the kings. Once proven, the transcendental theory will have served its mission — "to awaken," and will yield to the religious dimension. "Men would once more have to sound out the desires of these semigods that quietly interfere with their lives via paranormal phenomena."

Freixedo called for an intermediary theory to har-

monize both positions. "We receive very high frequency waves from the highest of the electro-magnetic spectrum, that appear to be purely physical, from unknown dimensions of the universe." The human brain, Freixedo suggests, converts these energies into "images," something like what happens on the movie screen — the luminical and sound impulses emanating from the projector are converted into living things by our mind. In this case, however, we know how the mechanics work, so we are not deceived. Yet something similar may be happening with the vibrations emitted from other paraphysical dimensions — "our minds are affected in a manner indistinguishable from the way it sees people and things in a real, physical sense, and that is why it is deceived in some way."

Freixedo emphasized that the Congress is not siding with either the transcendentalistic or intratranscendentalistic viewpoint, but that it recognizes that paranormal phenomena exists despite those who (like the writer of *The New York Times* article previously mentioned) feel we are losing time and wasting money by exploring the "non-existent."

For the next seven days, various scientists, doctors, individuals and groups (totalling 77 speakers from 17 countries) spent their time demonstrating, showing films and slides, theorizing, arguing, agreeing, or telepathically communicating. Subject matter included: astrology, precognition, telepathy, astral projection, levitation, telekinesis, psychophotography, biorhythms, electronic medicine, kirlian photography, psychomedicine, paranormal cures, teletreatments, cosmic medicine, fakirism, religious and magic rites, psychography, magic, sorcery, demonology, visions, apparitions, poltergeists, ghosts, haunted houses, spontaneous human combustion, cattle mutilations, holography, UFOs, pyramidology, metal bending, etc., *ad infinitum*. In fact the only thing *not* covered was the psychic influence of the proverbial kitchen sink.

The feeling that one was left with at the end of the Congress (as I have attempted to convey in the paragraph above) was one of confusion produced by an overwhelming input of information and research.

SOME MENTIONABLE HIGHLIGHTS

On Monday, November 21, a panel of medical doctors, psychologists and scientists discussed the medical importance of paranormal phenomena. During the course of a two hour session, the group described case after case of unexplained healing. Dr. Andrija Puharich addressed the Congress on a variety of topics. He cited, for example, the well-known case of the Brazilian curandero/healer Arigo (now decesased), who took only one minute to complete a correct diagnosis of a patient's condition. It took ten medical doctors five hours to confirm the same diagnosis. Where it has been possible to check properly, Puharich continued, modern medicine has proved diagnosis by curanderos close to one hundred per cent correct.

After discussing Uri Geller, metal bending, and the latest secret meeting in Iceland (where over ten thousand carefully controlled experiments proved conclusively that metal-bending was a genuine phenomena), Puharich noted that man, for the first time in recorded history, is able to get into his own genetic structure and change it, thereby determining his own future.

The most startling statement made by Puharich was that we have evidence (although he failed to say *what* evidence, however) that Russian researchers have developed a method whereby people can be unconsciously hypnotized against their will from over one thousand miles away. Controlled thought may no longer belong in the realm of science fiction.

On Tuesday, November 22, Marjorie de la Warr, co-director of the la Warr Radionics Laboratories in Oxford, England, demonstrated radionic equipment (which includes diagnostic and curative machines). The principle that any human cell carries the same energy fields as its host indicates that a blood spot can be subjected to treatment by the machines while the host organism is elsewhere carrying on daily activities.

On Wednesday, November 23, the French psychic and metal bender, Pierre Girard, took an hour to cause movement among six objects (glasses and aluminum tubes) that had been placed on a tray in front of him. Without touching them, he caused one glass to suddenly jump two inches, then a tube slide across the tray into Girald's lap. At this point Girald collapsed, apparently from exertion. Dr. Puharich, who came quickly to his aid and revived him, indicated that collapse is a common occurrence (even for Uri Geller): the mental effort necessary for the bending and moving of objects can bring on a crisis pressure which endangers the heart.

In the evening John Cutten, longtime honorary secretary and treasurer of the London Society for Psychical Research, gave an excellent discourse on mind-brain relationships. He presented the Congress with different views on how the brain functions, then outlined recent experiments showing that stimulation of certain areas of the brain produce recollection of past events in great detail. He mentioned that Russian cybernetic research shows that the human nervous system cannot differentiate between an actual experience and one that is vividly imagined. (Although we will not pursue the point here, this brings to mind the whole question of reality itself. Eastern teachers have been telling us all along that life as we perceive it is an illusion. If the mind cannot differentiate between actuality and imagination, then perhaps we will never *know* the reality behind paranormal phenomena.)

Cutten does not support either law: that the brain and mind are separate or that they are one. He feels the brain should be regarded as an *organ* of the mind, not the mind *itself*. Memory regression under hypnosis, which is sometimes claimed to include past lives, is not necessarily proof of reincarnation, according to Cutten. Such memories, he suggests, could come from a pool of common memory instead.

Cutten's research seems to be corroborated by other researchers, such as Dr. Emilio Haddad of Cairo University, Egypt, who discussed experiments regressing people to former lives by hypnosis. Here, too, evidence from such sessions points to a common pool of memory, rather than reincarnation.

If these two researchers are on the right track, then the implications may demand a total re-assessment of the nature of reality. It should be pointed out, however, that the experience of reincarnation and the ability to draw from a common pool of memory are not necessarily

mutually exclusive. If each individual consciousness has a potential to draw from the whole, it would continue to have this potential in any of its incarnations. Likewise, within the individual incarnation, the ability to draw from a common memory pool would be limited (and probably inhibited) by the circumstances and perception experienced during that lifetime. In other words, the two systems — reincarnation and the availability of a common memory pool — *could* co-exist, as well as interact on various levels.

The Congress did have negative manifestations as well, and these served to produce second thoughts for those who would promote as genuine all apparent "paranormal" self-acclaimed abilities.

Jorge Marti, a charlatan whose name I mention only to warn Forteans unfortunate enough to encounter him, gave various so-called "demonstrations" on telepathy, metal bending, manipulation of the hands of a watch, etc. He also claimed that he could make a chicken egg expand by using his psychic abilities. After dropping a "control egg" into a glass of water, he put another egg into a second glass, also supposedly containing water. When Marti displayed the second egg and said it had swollen due to his psychic power, Pierre Girard challenged him, saying that what had really happened appeared to be another kind of expertise, i.e., *fraud*. Vinegar is known to cause an egg submerged in it to expand. Marti assured the audience his ability was genuine, and that the substance in the second glass was water. At this point in the debate one of the officials of the Congress who was present stuck a forefinger into the glass in question. Then, after smelling his finger, he looked up and said simply: "It smells like vinegar to me." This caused Marti to furiously depart the podium.

Two days later, seemingly from nowhere, Marti stormed the platform, grabbing for the microphone from Dr. Cortes, the director of the committee, who was in the process of reading the committee's findings concerning Marti's "psychic powers." During the scuffle, people called for security guards to remove Marti, but none responded. Marti insisted the phenomenon he had produced was genuine. As Marti once again stormed out of the auditorium, Cortes continued reading the committee's report and findings regarding the incident in question. Proper tests had been made which showed the presence of acid in the water contained in the second glass. Indeed, a ten-year-old child with a magic kit would have been more convincing.

More convincing research, often accompanied by slides and demonstrations, was presented by such participants as Sybil Leek, Pat Flannagan, James H. Hurtak, Dr. Hans Naegeli, Dr. William Roll, Dr. Lee Sannella, and others.

As the Congress wore on during the week, more and more people, exhausted by the pace, complained about a variety of circumstances: translators were inefficient; most of the speakers were Latin Americans; more importantly, there was a conspicuous absence of any brujos or Indian curanderos. The press, which seemed pro-Congress at the inauguration, gradually became more and more anti-Congress. Too many false promises, outright charlatanism, chaos, lack of properly controlled experiments, and negative vibes turned the press coverage from pro to con.

In the midst of all the negative media coverage, it was reassuring to find Alan Newman diligently recording on film some of the more interesting backstage demonstrations of the psychic and healing abilities of many of the participants at the Congress. Newman, attempting to cover and film paranormal phenomena all over the world, utilizes a serious, intelligent and scientific approach. Recently, however, he has come under the attack of the Committee for the Scientific Investigation of Claims of the Paranormal.

The committee, which has filed a complaint with the FCC against Newman's NBC presentation on October 30, 1977 entitled "Exploring the Unknown," feels that NBC and the producers of its programs "are knowingly presenting questionable material of a highly controversial nature, do not make provision for the critical scientific viewpoint, which maintains that most of the content of these programs has not been properly verified, has in numerous incidents already been disproved, and may result in harm to the public." What do they expect from unexplained phenomena, which by its very nature is inherently controversial? It seems to me that the *real* harm may come from the repeated attempts to *repress* these matters of "highly controversial matter."

One of the problems consistently plaguing such a congress as this one is that too many individuals, involved in their own particular field of research, exclude everything else. In other words, they feel *they* have the answers within their field, and thus they continue to indulge in a self-enclosing totality.

On the other hand, a positive development was that a great deal of South and Central American research, much of it otherwise unknown to those north of the Mexican border, was presented. The enthusiasm and persistence of this research is encouraging.

Of course the most interesting and productive aspects of the Congress represented an indirect offshoot from the official proceedings. In hotel rooms, bars, restaurants, and parties, where people came together for real, uninhibited, pertinent discussions, many conversations took place in the small quiet hours of the morning. The valuable exchanges of insight and research, so lacking in the conference room, took on a new potential during these moments. (Jerry Clark treated a number of us to an unscheduled elucidation of the history of mutilations, for example.) Old friendships were renewed, and new ones evolved, while concepts flowed freely; and the good feelings denied by the press and the events of the Congress found their way into reality after all. For this reason alone the Congress was a success.

It is now history. The First International Congress of Paranormal Phenomena took place in the smog-infested environs of Mexico City. Although it is all over, it has also just begun. There will be more congresses, elsewhere. In the words of the late Dr. Wernher von Braun, "The paranormal can be put aside only by sophisticated fools and/or ignoramuses. Twentieth century mankind is beset with seemingly insurmountable problems — many of which may stem from paranormal, still-unidentified factors. Noetic (parapsychological) sciences may hold the only hope for the salvation of civilization."



COHERENCE IN CHAOS

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By R. Martin Wolf

The following is excerpted from a paper read at the First International Congress of Paranormal Phenomena, held in Mexico City, November 19-27, 1977.

INTRODUCTION

The United States uses more energy than any other country in the world. It was there that many of the most recent technological advances (radio, television, nuclear energy installations, radar, space communications, etc.) were developed and are at this moment fully operative. Much more of the land and air space is already destined to be filled with more microwave towers, high tension lines, superhighways, and the more invisible waves broadcast to the many televisions and citizen-band and other radios in that country. These will be superimposed on the pre-existing grid systems of railroads, highways and power lines. 765,000 volt power lines are increasingly encroaching on our countryside, built to carry the power from giant coal-burning generators like the one at Black Mesa, at the four corners where Utah, Colorado, Arizona and New Mexico meet (and where six of these giant coal-burning plants are located), or from any of the 65 nuclear power plants currently operating in the U.S. As a leader in the exploitation of energy, the United States greatly affects the rest of the world. Astronauts who returned to Earth claimed the pollution from Black Mesa was the only man-made creation visible from space.

This, the First International Congress of Paranormal Phenomena, comes at a timely moment in the history of man. As a species, we now face a moment of crisis. As creatures having the potential to destroy not only other creatures, not only other cultures, not even other continents and planets — we can, as a species, destroy *ourselves;* with this realization we enter a technological/mental crisis greater even than the very serious one we faced as a result of the Industrial Revolution.

At this crucial moment of cultural schizophrenia, we *must* choose to grow, to come to terms with self-realization, in order to *understand,* even though our gain from that understanding may be nothing more than simply whatever knowledge a species needs for survival. Intuitive insight and scientific proofs now come together with increasing rapidity, in many instances at speeds seemingly approaching the speed of light. New discoveries are made daily, sometimes hourly. Current technology allows us to almost *instantaneously* "materialize" concepts that not long ago would have been described by such terms as "outlandish." "Other-worldly," or "extra-terrestrial" are more modern terms for the same expression. And yet, as evidenced by our Mars probes, we cannot even tell whether or not our most advanced instruments are doing what they were designed to do — i.e., detect life. Are we simply experiencing the precognitive insights of an endangered species?

The "Man and Mind" theme of this congress is essential to the theory I propose as a way of answering a good many of the questions previously posed by researchers of unexplained or paranormal phenomena. Forteans, ufologists, parapsychologists, and in general all those members of a greater whole who seek to explain the unexplained have, I feel, all been looking at different facets of the same ultimate phenomenon. If it cannot be explained, perhaps it can be understood.

The Man and Mind theme calls to our attention an awe-inspiring potential: by using our brain to totally understand our place in the universe we can actively participate in a profound holistic experience. If, as our mystics would have us believe, everything is an illusion of the mind and all past and future knowledge is universally present, then we may be better able to comprehend the cultural schizophrenia threatening us. If the observed is to become one with the observer, if understanding is to be perceived by that which contains it, by the mind itself, then in order to encompass and participate in true understanding man and his mind must become, and act, as one.

MUTILATIONS: CHAOS IN QUIESCENCE

During a three month period in 1976 Steve Mayne (a fellow board member and trustee for the Society for the Investigation of the Unexplained) and I traveled through the Rocky Mountain area into the states of Montana, Idaho, Wyoming, Utah and Colorado. Working with various sheriffs' departments within these states, we investigated the phenomenon of cattle mutilation. It was while conducting our investigation into the unexplained events surrounding many of the mutilations that we realized many significant coincident similarities to other "paranormal" phenomena occurring in other areas of the United States and the world.

Because it has received a "low-profile" media coverage, and because the phenomenon has only recently received any attention at all, most of the information and statistics regarding animal mutilations are not readily available to researchers; it was for this reason that we deemed it necessary to investigate first-hand. It was hoped that by speaking and working directly with the farmers, ranchers and sheriffs, by examining the animals ourselves, we would have a better understanding of the situation as a whole.

What we discovered was a very real phenomenon, and more. The Society for the Investigation of the Unexplained utilizes diverse interests and disciplines in order to investigate the unexplained. Ours is not a single focus. We do not champion the existence of UFOs, we do not promote psychic healing, we do not endorse dowsing. Since we are not out to proselytize, ours may be viewed as a more interdisciplinary approach which deals with a variety of unexplained phenomena.

In a very real sense, belief and disbelief are irrelevant. William Blake, a sort of scientific mystic of his age (he was the reverse-astronomer who discovered a universe in a grain of sand, for example), observed that "anything capable of being believed is an image of truth." Ivan T. Sanderson, the founder of the Society for the Investigation of the Unexplained, once offered a complementary axiom when he observed: "As a result of all ... rules, beliefs, and regulations that have been set up by Man ... about 99.99 recurring percent of existence goes unnoticed." Since we take into account all fields of unexplained phenomena, we are in the distinctly advantageous position of being able to monitor whatever threads of pattern, paradox, coincidence or similarity that may run through the tapestry of the unexplained. Cattle and other animal mutilations, shrouded as they are within a matrix shared by a multitude of other paranormal or Fortean phenomena, when coupled with insights into the interplay between certain "natural" and "artificial" energies, may bring to light not only any correlations that may exist; they may bring to us also an understanding of something of the nature of all previously unexplained phenomena.

Although the results of our investigations are covered in much greater detail in the Winter 1977 issue of *Pursuit*, (1) the quarterly journal of the Society for the Investigation of the Unexplained, I will nevertheless attempt here a brief outline of our findings in order to establish a more comprehensive matrix for the theory which I am about to propose.

Animal mutilations, although there are widely scattered historical references to phenomena of a similar nature, first aroused public interest when the body of a horse named Snippy was found, mutilated, on a ranch in Colorado in 1967. During the same period, mutilations were being reported in a number of mid-western states. Many of these reports did not, however, enjoy the wide media coverage received by Snippy, and most of those which did were labeled as cases of mass hysteria. John Keel, a longtime researcher of the unexplained, was investigating numerous manifestations of the paranormal occurring during this same general period near a town named Point Pleasant, on the Ohio River. He writes:

> In March 1967, a truly astonishing UFO "attack" took place in West Virginia, apparently supporting the vampire theories I was entertaining at the time. While other UFO investigators had been collecting endless descriptions of things seen in the sky, I was out examining dead animals in remote fields, pondering the real meaning behind the bloodless carcasses. (2).

Although it is generally agreed that the phenomenon started around the turn of the century, the most recent "wave" (since Snippy) has seen more than twenty states affected. In some of these states (such as California, Oregon, Washington, Wyoming, Idaho, North Dakota, Ohio, West Virginia and North Carolina) the phenomenon has erupted briefly, only to subside or desist after a short period; in other states (Montana and Colorado, for example), the phenomenon continues.

Although cattle represent the animals most often found mutilated, they are not the only animals. Mutilated chickens, pigs, sheep, horses (and ponies), dogs, goats, deer, bison (buffalo) and even a llama have also been discovered.

(The diversity of the locations where the mutilated animals are found, along with other consistencies and inconsistencies, were also discussed, but since most of this was covered in my article in *Pursuit* ["Chaos in Quiescence," Vol. 10, No. 1], I will mention here only pertinent excerpts. The fact that many of the mutilations occur near water was brought out, as was the fact that many of them also occur near military installations [missile silos in particular]. The unexplained loss of considerable quantities of the animals' blood, along with evidence of "surgical" or serrated, often circular cuts, would tend to rule out the predator-theory; other theories have evolved.)

In the article I wrote for *Pursuit* I attempted to explain, in a logical way, how the various theories have evolved *naturally* from the consciousness of those concerned with the reality of the phenomenon. This conscious attempt to *explain* is the result of the mind's need for an "answer" in order to rationalize what cannot be *understood*. The resulting theory can, in turn, structure the future reality of the experience. The interesting part is that none of the theories proferred so far *work*.

The mutilations, both very real and at the same time very "unnatural" or "paranormal," continue to occur. The evidence for some involvement beyond "predators" (unless you expand your parameters of the definition to include Man and a number of other possibilities as well) is overwhelming. The fact that the evidence is consistently ignored is almost frightening.

(I also discussed some of the more bizarre and unusual phenomena accompanying the mutilations: the many UFO reports, the "hairy creatures," the circles which often appear to be burned or pressed into the ground, the strange "unmarked" helicopters, and the white-robed and/or black-robed figures which mysteriously appear and disappear. I pointed out that one town in Ohio which has experienced mutilations and rumors of robed figures also experienced [in one week] a 400-500 percent increase in the sale of guns.)

Bizarre coincidences, unusual circumstances, and paranormal events which seem to defy easy explanation accompany the mutilations in whichever state or county they may occur. All efforts by the authorities to "explain away" the phenomenon have failed. Many of the sheriffs' departments, overwhelmed by the results or, equally, by the *lack* of results, have simply halted any further investigation. The mutilations continue.

If, as I feel may be the case, this phenomenon simply represents another recent fragment of the whole spectrum of unexplained energies and manifestations, then that fragment, that portion, may contain and reflect something of that Whole. Perhaps the animals which have been mutilated, those lifeless and unfeeling creatures which have had their reproductive organs or their eyes, ears, tongues or noses so surgically removed or altered, can somehow nevertheless serve to convey a message that may in one way or another register on our sensibilities, as well as our consciousness, as understanding.

HOLOGRAMS: COHERENCE IN CHAOS

Over the years, serious investigators of unexplained phenomena (and by this I mean ufologists, parapsychologists, and all the other labels given to those who would investigate the unknown energies and manifestations around us) have been plagued by running up against what I call the media-image. Ghosts, UFOs, "spooklights," Bigfoot, mutilations, and many other anomalistic events all exhibit certain bizarre parallels, paradoxes, and coincidental similarities. "Witnesses" may often puzzle researchers by relating obscure events or details that, even had they done considerable reading of popular periodicals, they should not know about. Although this paradox has puzzled researchers for years, there is a model, I believe, which can explain it.

Man, throughout his brief history, has sought many models by which to explain the universe. Philosophers and scientists have looked within, toward the microcosm; Blake saw a universe in a grain of sand. Others, like Copernicus, have looked macrocosmically outward, to the stars. Entire cultures have sought answers as well. Within those cultures ritual and dogma, as has been evidenced in the fields of both religion and science, serve to artificially structure or model our sense of reality for us.

The most revolutionary model in our history may have finally been recognized officially. Although for as long as Man can remember, the shaman, the mystic, the "occult" or "spiritual" side of him has told him things that his skeptical eyes and incredulous ears will not let him see, hear, or understand. Until the mind can structure a reality, it does not exist; it is said that when Magellan's ships landed in Tierra del Fuego, the natives could not see the ships in the harbor until their shamans informed them the ships could be seen if the natives looked very carefully....(3).

A recent special issue of the *Brain/Mind Bulletin* (4) discusses the independently developed holographic models of the universe arrived at by David Bohm, a physicist at the University of London, and Karl Pribram, a neuroscientist at Stanford:

> Pribram's theory has gained increasing support and has not been seriously challenged. An impressive body of research in many laboratories has demonstrated that the brain structures see, hear, taste, smell and touch by sophisticated mathematical analysis of temporal and/or spatial frequencies. An eerie property of both hologram and brain is the distribution of information throughout the system, each fragment encoded to produce the information of the whole.... There are intriguing implications in a paradigm that says the brain employs a holographic process to abstract from a holographic domain. Parapsychologists have searched in vain for the energy that might transmit telepathy, psychokinesis, healing, etc. If these events emerge from frequencies transcending time and space, they don't have to be transmitted. They are potentially simultaneous everywhere.
>
> Changes in magnetic, electromagnetic or gravitational fields and changes in the brain's electrical patterns would only be surface manifestations of seemingly unmeasurable underlying factors.

Briefly, a hologram represents an image captured by recording the interference patterns created when a coherent beam of light is separated, scattered by the object being recorded, then reunited. The process, although it differs from that involved in photography, nevertheless resembles a kind of lensless photography. As such, holography may be nature's way of storing information.

I will attempt here to diagram the basic "record" and "playback" modes utilized by those currently experimenting in holography. (See figure 1.)

The only difference between the "record" and the "playback" modes is that in the playback mode, the object is absent. As long as the angle and the distance of the reference beam remains the same, however, the three-dimensional *image* of the object remains.

Please bear in mind that we are not discussing a photograph. Holograms are produced without a lens, without having to focus, and in three dimensions. What would be compared to a "negative" is the holographic plate itself. Information stored upon it appears to be nothing more than a series of grainy concentric circles — and yet all the information concerning the resulting image is stored therein. An analogy would be to drop some pebbles into water, then to photograph, and thereby freeze the resulting interference patterns. (See figure 2.) By once again shining a coherent beam of light through or upon the plate, the image becomes more real than many hallucinations. Given a little time to catch up, technological advances may soon provide additional auditory, tactile or olfactory reinforcement to the visual, 3-D reality.

Some of those who consider the hologram as a model of the universe have suggested that our daily experience is made up of the interaction of different psyches, which form interference patterns with other psyches of other forms of consciousness in the universe. Although there is

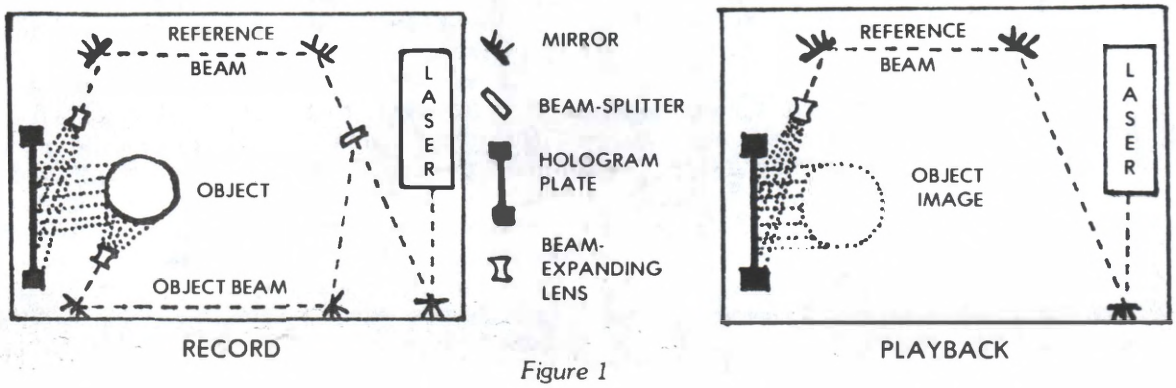


Figure 1



Figure 2

no absolute reference consistency, all frequencies produced at each level of consciousness go to make up an Absolute "Universal Mind" Hologram. In other words, all information is available at all times at any point in the universe.

I would suggest that if we wish to follow the image a little more closely, a number of analogies become apparent. If we treat "reality" (and we must not attempt to define this word) as a hologram, then whatever we as individuals may understand concerning that reality represents simply *one perspective* of the event or object in question.

This can be illustrated more easily in diagrammatic form (figure 3).

Each fragment of the holographic plate contains the entire image. If a piece of the hologram is taken away from the whole, the image remains. In figure 3 I attempt to indicate how, although the perspective may change, all the pertinent information is *still present,* even though the beam passes through two very different (and relatively small) areas of the plate. (Also please note that the light which passes through the plate does not pass through a lens.) Unlike a photograph, a two-dimensional image which, when cut in half, would leave only *half* the image remaining, when we break the holographic plate into pieces, each portion contains the image — even though the perspective may vary. Rather than the flat "picture" effect that photography provides, the hologram offers us a "window," through which to view reality.

Already our analogies have drawn us back to those strange mystical concepts that have plagued us as a species since we learned to communicate. In terms of the personal transformation of the individual we can now see, perhaps, how mysticism and science *can* converge in the profound sense of harmony that man has always considered as spiritual potential.

> Are profound, transforming personal experiences coincident with attunement to underlying universal symmetries? Consciousness research already has tied activity in the brain's limbic system to such experiences. The term "transcendence" may prove a literal description — some sort of phase relationship between two brain processes usually considered mutually exclusive: the analytical and the holistic (like particles and waves), the intellectual and the intuitive. (5)

And by applying the same model to philosophy and evolution, we realize also:

> Pierre Teilhard de Chardin's idea of a noosphere — an invisible planetary web of consciousness — is interesting in light of the new theory. So is the age-old esoteric notion that other dimensions of reality exist at frequencies normally not perceptible to us. And consider the alchemists, who believed that they could transmute earth's elements if they could reach a point of utmost harmony in the universe. (6)

Ultimately we have a reality which is irrelevant to time and space. There would seem to be no logical argument against the model available, thus the option to deny the model may be non-existent; we can only act as quickly as possible to expand our parameters of awareness to include the concept. By so doing, the resulting understanding may serve to illuminate many former shadows cast by our pre-structured belief systems.

If we as individuals consider ourselves capable of sharing in the light of understanding, we must examine more closely the concept presented by a universal reference system. Although we may each be *capable* of understanding a certain spectrum of the Absolute Hologram, our minds nevertheless remain structured by everything we have ever learned. Each discipline, each specialized view of the universe, is a restricting factor to our theoretically unlimited perception potential. Rather than to examine all those detailed aspects of what we *think* we know, let us instead observe the unexplained. Perhaps in this way, unfettered by prejudice engendered by prerequisite reality constructs, we can better grasp the knowledge lying within.

Seeking additional interdisciplinary answers to ultra-disciplinary phenomena, we must also examine the interference patterns produced by the different energies on our own planet. As human organisms, we are subject to varying psychological and emotional mental interpretations. Thought, comparison and emotion all serve to

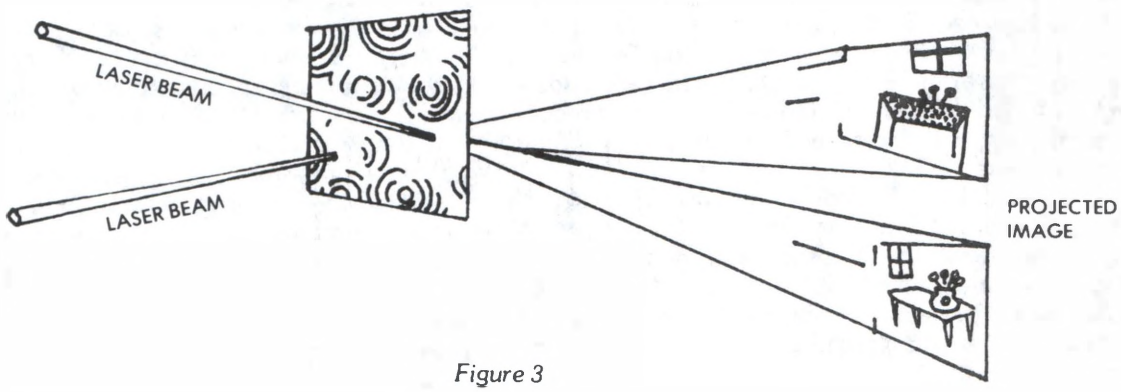


Figure 3

define our sense of reality. The mind itself functions by means of certain delicate electrical interactions; this is a characteristic shared by all organisms within our environment. Although within the individual organism, this energy may be measured only in microvolts, what is produced by us as a species may, when viewed holistically, represent an important integral aspect of, for example, the earth's entire magnetosphere. Let us observe some of the natural and artificial energies present, both currently and historically, on Earth.

ARTIFICIAL ENERGY: CHAOTIC INCOHERENCE

In the 1890s, the United States was undergoing a vital change. That extreme condition of mass cultural schizophrenia of which I spoke earlier was upon us. Our technological advances had overwhelmed our ability to structure our reality.

The brief period between 1804, when Captain William Clark and Merriweather Lewis, while far up the Missouri River, observed "immense herds of buffaloe, deer, elk and antelope," and 1900 saw a phenomenal alteration in energy-patterns.

Although it merits few pages in the history books, it was during this period that representatives of the more "civilized culture" that was to come almost succeeded in completely destroying an entire species of animal. That may not sound like much today, when we as a species in our own right have the capability to destroy *several* species at a time — through as violent an act as war or through as passive an act as constructing a peace-time pipeline. Along with the destruction of the buffalo came the virtual cultural genocide of the Native American populations which had actually settled the country long before those who replaced them even had a history to put into books.

During that same period (between 1804 and 1900) not only had an entire species of animal, several tribal cultures and the majority of the Native American population been destroyed, but violent demographical changes were affecting the eastern states as settlement patterns moving westward drained many areas of their former populations.

And although mountains of buffalo bones were still being shipped east in the 1800s, the arrival of the railroad had finished off those few remaining animals that had somehow managed to survive.

More roads, railroads and electric power lines followed in the wake of the buffalo's death. In the years between 1866 and 1883, over 4½ million head of cattle were driven from Texas to the railroads in Kansas. The buffalo had been replaced. More roads, more fences, more harnessing of power ensued to structure the diminishing wilderness. This artificial restructuring of the land and its energies echoed the mental interference patterns resulting from the restructuring occurring in the human psyche during the same period.

If there existed a cultural crisis in the west where settlements were growing and expanding, imagine how much more schizophrenic the atmosphere in the midwestern and eastern states, where populations had diminished and the effect of the technological quantum jump brought about by the Industrial Revolution served to only further eclipse consciousness and understanding.

It was around this same time that people in several areas of the United States were experiencing paranormal manifestations (UFOs, wildmen, phantom cats, etc.) on a fairly regular basis. Waves of hysteria, mysterious fires, epidemics, religious suicides, ghosts and other unexplained phenomena occurred in states like Wisconsin. In 1897 in Ohio, "airships" were seen throughout the state (7). Almost simultaneously came reports of wildmen, phantom cats and other enigmas, many of which probably went unreported because they were thought to represent states of hysteria even then.

Explaining the "paraphysical" events as precognitive insights into the coming age of air travel may be acceptable, but it does not quite adequately explain what was truly occurring within the mass psyche. Many of the same areas in Ohio which reported phantom airships and phantom cats in 1897 were the same as those which reported mutilations and UFOs in 1967.

Imagine for a moment, if you will, the technological advances which have been implemented in the intervening years between 1900 and mid-century. During this period, there was a tremendous increase in the number of power lines, railroads and interstate highways racing across the country, filling in all the spaces, cutting their unnatural corridors across the landscape and the country.

Since the 1950s, many more powerful energies have been released. The same communications-advances enabling us to talk to astronauts on the moon or our fellow motorist down the highway have unleashed immeasurable amounts of microwaves and other energies. Our defense systems have added more microwaves to our environment. One of these defense systems utilizes the same frequency as that which the human mind utilizes while in a state of relaxed meditation. Nuclear power-stations, radio telescopes, hydroelectric dams, and radar bases occupy much of the space in the country that is not already subject to mammoth strip-mining operations on the land, giant oil spills across the surface of the oceans and cancer-producing chemicals which fill the air.

It is not possible to show you many instances of these on a map. Roads and highways and sometimes railroads can be seen on a road atlas; the rest can only be ascertained perhaps through intuitive insight, a process in the human brain which up until now has been explained only in terms of an electrical interaction.

We can, however, examine some of the *effects* produced by these man-made energies.

In the U.S. one of the older (as it now appears in the light cast by our recent discussions of the holographic process) advances in communications technology resulted in the widespread use of television.

Television: a few years ago it was given the dubious honor of ranking second to the greatest technological invention the world has ever known — the machine gun.

In the preceding philosophical analysis of the hologram as a model for reality, I mentioned that others have suggested there may exist no "absolute reference" for human consciousness to utilize in attempting to mutually ascertain the nature of reality. Although ultimately it may be *all* frequencies which make up the Universal Hologram, I nevertheless feel that many of the manifestations of paranormal phenomena, many of the hallucinations, much of the hysteria experienced in various locations of

the country may be due, in part, to very real media-structured culturally determined hologram-like interference patterns which become registered upon the individual or upon the mass psyche by means of some electrical process (not unlike the process of hallucination, perhaps) within the brain. Although we will deal with this concept in greater depth shortly, I would suggest that this explanation may be misleading. While I seem to be implying here that much of the paranormal phenomena we experience is of an unreal, hallucinatory nature, I hope to be able to further qualify this impression by showing that what we are discussing is actually the end result of a very different process.

In seeking a coherent reference we cannot do better than observe the mass media treatment of certain images, and among all mass media developed so far it is television which offers the best model for reality-structuring. Television can shape the mental constructs of an entire population, often simultaneously.

Tele•vision. The very word exudes a mystical connotation.

There is no doubt that television shapes reality.

A fifteen-year-old boy recently brought to trial for murdering his 82-year-old neighbor was "intoxicated on television," according to his lawyer. Paradoxically, the proceedings of the trial itself were televised for the first time in the history of the county where the trial took place. Although the boy's attorney cited an estimated 2,300 studies linking televised violence to aggression, the defense lost (8). Even though there was evidence that the average youngster, by the time he reaches the age of 18, has watched 18,000 TV murders, the judge felt there were no studies linking "specific" TV shows to "specific" acts of violence.

Shortly after the airing on television of a dramatization of the Manson Family slayings, I was personally told of an incident which took place not far from where I lived. An acquaintance told me how he and his wife were sitting on their porch watching the movie on television, when they heard a violent knocking at the window. They both ran to the door, to discover a woman screaming hysterically and incoherently. Thinking perhaps she had been involved in an automobile accident or worse, they calmed her enough to ascertain the real reason for her hysteria: she too had been watching the television, and had somehow absorbed that sense of reality so strongly that she now felt Manson was 'out to kill her.'

It has also been noted in surveys conducted among doctors that many physicians feel TV violence contributes to behavioral or medical problems. Symptoms, especially in children, may include heightened aggression, epileptic seizures and nightmares.

Aside from the physiological and psychological reality structuring toward which television undoubtedly contributes (if it did not do so there would be no sponsors willing to spend thousands of dollars a minute advertising, nor would one fictional medical show have received over 250,000 requests for medical advice), there are physical effects as well. Microwaves, used for the transmission of television programs, can, whether in cooking ranges or coming from microwave towers, boil the blood of living or dead organisms and short-circuit the electrical system within a pacemaker.

All known mental processes are also electrical ones. If UFOs and other paranormal manifestations are able to affect TV and other electrical systems (as is often reported), then those systems and manifestations may be vitally linked to each other as well as to man and his mind. In other words television, which produces psychological and physical effects, may also be capable of *para*psychological and *para*physical structurings as well.

John Ott, who has received many citations and awards from scientific and medical societies for his research concerning the effects of natural and artificial light on living organisms, has examined some of the harmful effects produced by television. [Editor's note: Members are invited to read John Ott's excellent study of artificial lighting and its possible connection with cancer in "Paradoxical Orthodoxy in Cancer Research," elsewhere in this issue.]

X-ray radiation is constantly emitted from a TV set. After discussing how the U.S. Public Health Service, while measuring various models of TV sets from a number of manufacturers, had found the highest level measured in any particular tube to be "1.6 *million* times the acceptable safety level ... established by the National Committee on Radiation Protection," Ott comments:

> The X-ray radiation from a TV tube is contained in a very narrow spike within the range of less than one angstrom unit. Therefore, the intensity of the radiation in this narrow band of X-ray would have to be extremely high in order to equal the total energy of the broad, even distribution of total background radiation. Biological systems sensitive to this narrow spike of X-ray radiation from the TV tube would therefore be greatly over-stimulated. (9)

Our observations must depart from television in order to include a more macrocosmic concept of electromagnetic radiation in general. During this transition it would behoove us to relate our finding to many of the reported sensations and occurrences often associated with manifestations of the paranormal.

If we have followed the psychological implications of the media-image so far, we may have solved a problem which has puzzled the researchers of paranormal phenomena for some time, and of which I spoke earlier. How, many of us have wondered, can witnesses, apparently innocent of certain common intricacies and consistencies, nevertheless report details which they could not have known were common to other reports coming from around the country? This would seem to transcend hysteria and to denote instead some common hologram-like information coding and exchange. The hologram would serve to explain not only the "unreal" nature of the manifestation; it also would allow for an exchange of information. The total coding of the information potentially available to the witness would also be subject to the reinforcing structure provided by the media-influenced belief-system of the witness. (Many of the claims put forth by witnesses stem from the fact that most representatives of our species, when faced with a phenomenon that cannot be scientifically, analytically or logically explained, will revert to the deeper fringe explanations offered by religion or pseudo-science. These explanations, even though reli-

gious or occult in nature, are nevertheless culturally determined and as such readily fit the "media" analogy I suggest.)

We must also keep in mind the high correlation of UFO appearances, cattle mutilations, Bigfoot accounts, "spooklights" and other paranormal phenomena occurring in the immediate vicinity of: microwave towers, high-tension power lines, nuclear power installations, hydro-electric dams, bodies of water, missile silos, railroad tracks and even mobile homes. All of these, I would point out, in one way or another are affected by the transmission of electromagnetic energy. Whether in the form of low voltages, or chopped into hundreds of short bursts a second, many of the frequencies emitted can affect biological organisms in the immediate and the not-so-immediate vicinities of the above-mentioned objects — all of which either emit, or act as conductors of, electromagnetic radiation. The human mind, even in the process of providing subjective interpretations, also responds to the electrical impulses and potentials involved.

Curt Sutherly, a fellow member of The Society for the Investigation of the Unexplained, and I have often mused over the unusually high number of Bigfoot and UFO-related phenomena witnessed near, or from within, mobile homes, especially those with air conditioning units. It has been theorized that the "entities" in question are attracted to these homes. Other conclusions may now be possible when we consider that many air conditioners currently in use in the United States can create frequencies which may affect the mental processes. The 60-cycle per second frequency of alternating current in electrical outlets in the U.S. can, when utilized by fluorescent lighting for example, produce headache, fatigue, and epileptic seizures in living organisms which may be subject to them.

Combine the frequencies produced by an air conditioning unit with those from a television set. Add fluorescent lighting. Although we cannot visually observe the resulting electrical interference patterns, we can consider the fact that patterns produced by microwaves would undoubtedly behave very differently inside an aluminum structure (such as a mobile home, for example) than they would in the open air. If we had the capability to measure and record our results, and if we could find a mind suitable to receive, register and transmit the resulting energy interference pattern, then we may very well have the formula necessary to create monsters.

What are some of the other measurable effects of EM radiation upon biological organisms? As we continue, it is very important to keep in mind the similarities to alleged paranormal manifestations. Some undeniable parallels exist.

John Ott, continuing his discussion of the harmful effects of radiation in general, writes:

> ... It has been general practice to consider only evidence of visbile injury or damage to cell tissue in studying the harmful effects of radiation. However, our studies have shown that the pigment granules of the epithelial cells of the retina, which are recognized as having no visibility function, are highly stimulated when placed near a TV tube which has been covered with heavy black photographic paper so that no visible light reaches the cells.
>
> If this layer of cells in the retina which have no visibility function is, in fact, the photoreceptor mechanism that stimulates the pineal, pituitary and other areas of the mid-brain region by means of neurochemical channels, then levels of radiation well below those necessary to produce detectable physical injury to cell tissue could reasonably be expected to influence the endocrine system and produce both abnormal physical and mental responses over an extended period of time. Radiation stress must be considered as a possible variable or contributing factor. Just how the mechanism works that causes certain pigments of some plants, animals and people to react to specific wavelengths within the total electromagnetic spectrum is a challenge to future research. (10)

Later, Ott discusses again the problem of radiation produced by fluorescent lighting. He found that

> A combination aluminum "egg crate" and wire grid screen, in addition to allowing the full-spectrum light to pass through unfiltered, grounded the radio-frequency energy given off by all fluorescent tubes. This radio-frequency energy is known to cause inaccurate readings from the very sensitive equipment used in the scanning rooms of hospitals and also from some computers. A Russian paper reports that the radio-frequency energy from fluorescent tubes was recorded in EEG readings of human brain waves. (11)

At another point, Ott discusses the findings of other researchers.

> Dr. Susan Korbel, at the University of Arkansas, has reported laboratory rats "dancing around" and acting "as though they had been given a type of nerve gas used in World War I" when they were subjected to low levels of microwaves. There have also been reports from Manitoba, Canada, of dairy herds, located within two miles of telephone microwave relay towers, giving considerably less milk, poultry producing only a fraction of their usual egg quota and flocks of chickens going into sudden, unexplained hysterical stampedes. (12)

Ott also refers to the findings of Lewis W. Mayron, Ph.D., of the Nuclear Medicine Research Laboratory of Veterans Administration Hospital, Hines, Illinois.

> He points up an impressive list of references concerning the effects of electromagnetic radiation on animals and humans. Some of these effects include changes in electroencephalogram (EEG) frequency and amplitude in rabbits; subnormal EEG activity in a group of one hundred twenty people who had been exposed for more than one year to electromagnetic energy in the centimeter wavelengths; nervous exhaustion with irritability and, in some instances, abnormal slowness of the heartbeat; and increased incidence of reports of headache at the end of the workday as well as sleep disturbance and memory change. (13).

In the U.S., as I mentioned earlier, there also exists a great network of power lines. These frequently carry 500,000 volts (or 500 kilovolts) across the country. In recent years, increasing opposition has developed toward the use of even more powerful lines currently being built in order to carry energy from giant coal-fired generators or nuclear power plants to major cities. By 1974 seven states had 765-kv lines. Over 2500 circuit miles of these increased voltage lines are planned for completion by 1980. (Conservative estimates project the construction of 300,000 miles of new transmission lines in general in the U.S. by the end of the century.)

The interesting fact here is that much electromagnetic radiation is lost into the atmosphere normally, through a phenomenon known as "corona discharge," which occurs as a result of rainy or humid conditions causing the high-energy electrons to leave the surface of the conductor, in this case the power line, and strike and fragment the molecules in the air. (The wires themselves, although they may carry 765,000 volts, and in the case of parallel lines *double* this capacity, are not insulated. The power companies seem to feel that air is the best insulator....)

When these lines and the energies released into the air by them pass near some conductive material such as the metal rails of a railway line, wire fences, aluminum barn roofs, or the water of a river perhaps, innumerable channels may be opened for widespread distribution of the energies in question.

Further impressive evidence for the harmful results of electromagnetic radiation emanating from high-tension lines comes from Russia. (The Russians, it is interesting to note in this context, are also doing much more research into the nature of paranormal energies than perhaps any other country of the world.)

> In 1962, after the first Russian 500-kv lines had been operating for several months, men working at the substations began to complain of headaches and a general feeling of malaise. They associated these symptoms with exposure to the electric fields. The Russians made a long-term study of these effects with systematic medical examination of men working at lower-voltage substations. These studies showed that long-time work at 500-kv substations without protective measures resulted in "shattering the dynamic state of the central nervous system, heart and blood-vessel system, and in changing blood structure. Young men complained of reduced sexual poten(cy)." The severity of these effects appeared to depend on the length of stay in the field. (14)

If a strong electrical field of, say, 6,000 volts per meter can be measured by its ability to illuminate a hand-held (and unplugged, of course) 40 watt fluorescent bulb over an area over four hundred feet wide directly under 765-kv power lines, then in what other quantities and forms can electromagnetic radiation extend to areas where it *cannot* at present be measured?

In his study of the evolution of human intelligence, a work entitled *The Dragons of Eden,* Carl Sagan notes:

> There are, it seems, three principal states of mind in human beings: waking, sleeping and dreaming. An electroencephalograph, which detects brain waves, records quite distinct patterns of electrical activity in the brain during these three states. Brain waves represent very small currents and voltages produced by the electrical circuitry of the brain. Typical strengths of such brain-wave signals are measured in microvolts. Typical frequencies are between 1 and about 20 Hertz (or cycles per seconds) — less than the familiar 60 cycles per second frequency of alternating currents in electrical outlets in North America. (15)

Turning our attention for a moment to hallucination, that possible fourth state of mind which also by its very nature represents a close analogy to a hologram, has recently been shown to have its roots in excitations of the central nervous system (16).

If indeed 500-kv lines in Russia and elsewhere do indeed produce such effects as a 'shattering of the dynamic state of the central nervous system,' then we can perhaps better understand how the energy involved in the production of electrical interference patterns coming from such sources as a 765-kv power line could have the immediate or long-term accumulative effect of creating a change in the normal electrically-charged river, roadway or ley line of the central nervous system of an organism (or, holistically speaking, a planet). In this way, hallucination or some other form of holographic reality could become a very "natural," and certainly very real, possibility.

NATURAL ENERGY

Explanations for the inexplicable have been offered since man's brain began to function. Without the cluttering produced by present-day civilization, reality may have been more readily apparent. Perhaps we should have listened to some of those cultures we were so busy destroying.

The many stone circles, standing stones, sacred springs and wells around the world testify to ancient man's concern with the earth, water and sky, and their relation to the cosmos. Nature revealed herself to these peoples as sacred harmony. Everything organic or inorganic was a part of everything else. The deepest threads of mysticism weave all future and past events into the fabric of the present. In a world replete with natural energies, one man's action *can* affect the universe.

Along with this holistic understanding came the more intimate insights into the natural flow of energy on this planet. Today, many of those natural areas are nonexistent. During the past eighty years or so a permanent energy redistribution has been effected by man's artificial manipulation of energies.

Historically, man has almost always associated paranormal events with disasters, such as floods, earthquakes, etc. This natural concept works in complete harmony with a holistic world-view. What scientists of today view as disjointed coincidence may in fact constitute deep relevance and profound significance for future understanding.

Dr. Michael Persinger, of the Environmental Psychophysiology Laboratory, Laurentian University, Sudbury, Canada, is also a member of the scientific advisory board of The Society for the Investigation of the Unexplained.

He recently fed 2,000 Fortean events into a computer in order to see what one of man's more advanced technological entities could tell us about some long-standing unexplained phenomena. Results indicate a striking correlation between minor and major earthquake activity and unusual events (17).

Strong electromagnetic fields are produced as a result of changes in tectonic stress preceding seismic activity. As we have already observed, dynamic changes in electrical fields could also be reflected in the geography of the huamn brain as well. These energies could be transported, by means of conductivity, along railroad lines (for example), or transferred, in the form of media-encoded hologram images as electrical impulses of "thought," perhaps from one human mind to another. Hysteria may simply represent mental conductivity, a contagious transfer of such electrical impulses as memory and perception.

In light of this, I would recommend that those interested in the phenomenon of cattle mutilation read an article by James R. Stewart entitled, "Cattle Mutilations: An Episode of Collective Delusion," in *The Zetetic*, the journal of the Committee for the Scientific Investigation of Claims of the Paranormal. The author claims all "mutilations" are the result of small predator action which, when combined with "mild mass hysteria," leads to collective delusion. Although I basically disagree with him on a number of issues, he nevertheless touches on some pertinent aspects of media-determined realities as we have discussed them here. He notes, in conclusion:

> Given the pre-existence of certain conducive and straining features in the local area, the episode developed in the aforementioned fashion. However, the evidence presented by various authorities leads one to conclude that the episode was in fact the result of collective delusion. The most convincing explanation of the episode is as follows: For reasons associated with strain and anxiety people started to interpret an everyday occurrence (the deaths of cattle) in a new, bizarre manner. (18)

He "debunks" all mutilations by attributing them to a misunderstanding of natural events by people who exhibit "lower levels of education" as well as a "lower socio-economic class status."

Instead, I would suggest that the ranchers, living as they are in a closer direct relationship with the land (and certainly more aware of what small predators can do than a sociologist who spends most of his time in academic environs), may be more perceptive than they have been given credit for in the article.

During our investigations, Steve Mayne and I had a woman "witness" to a "paranormal" event ask us hesitantly, quietly, when we were alone: "Do you think these things could be manifestations of evil...?"

Ancient traditions (as well as more recent folklore of many countries) often traced "ley lines" ("geodetic force lines" would perhaps represent a more scientific term for these existing channels of energy) across the countryside. It is believed that many ancient sacred sites were constructed on these natural centers. It is common knowledge to many of the peoples previously considered "primitive" that wild animals favor these lines of energy as places to give birth. These areas are also favored by such insects as gnats and bees, which will frequently be found hovering over, or even constructing their homes within, these ancient sites.

Could it be that man's preoccupation with altering the natural forces of the Earth has redirected or destroyed the potential for a more holistic symbiotic relationship with that planet? A parasite can, through the destruction of the host, lose his dwelling-place. Is it possible, at this juncture in our space-time continuum, to learn? Can our eyes and ears still observe and listen?

We have seen how man fenced and divided and altered the natural space and energy of the west in a very few years. As in most other areas of the U.S., man has chopped nature into fragments that suited his own personal exploitation of power. We are aware of the ways in which he has introduced artificial energy into his environment. In the western and plains states of North America, the native bison has been replaced by domestic cattle. The buffalo, a hardier range animal, was resistant to almost all diseases that afflict domestic breeds of cattle.

> Research begun by the National Buffalo Association has shown that all buffalo have one blood type. Domestic cattle, however, have more than fifty different blood types. Some researchers have put forth the theory that buffalo, high in gamma globulin, might some day be used in humans when a single large transfusion is required as in the case of heart surgery or a serious accident. (19)

After destroying the reproductive potential (and thereby virtually all future progeny) of an entire species, by terminating so abruptly the harmonious man/animal relationship that existed in nature, and by substituting "artificial" energies and strip-mining for natural pre-existing energies and conditions, have we somehow inadvertently and unconsciously evolved to the present potential of being able to perhaps understand something of the silent message being offered by those enigmatic mutilated carcasses? Staring with blind hindsight silently and obliquely into space, drained of their life force, abandoned in death by parent or offspring, they cannot see. They have, as a living biological organism, been forced out of existence.

Returning to the possibility that paranormal events may signify or symbolize disastrous events that are to come and that the natural cycle of reproduction and fertility may be vitally linked to the temporal understanding of that event, we can examine two rather striking and revealing incidents in the history of mutilations.

I have already read to you a statement by John Keel which indicates how in March, 1967, during a "truly astonishing" attack of UFOs near Point Pleasant on the Ohio River (and please note the connection with water: many of the accounts at the time described UFOs as diving into, or coming out of, the waters of the Ohio River), he was "out examining dead animals in remote fields, pondering the real meaning behind the bloodless carcasses." (It was on March 5, in the same vicinity, that a bloodmobile full of fresh blood, while traveling parallel to the Ohio River, was allegedly "attacked" by a UFO [20].)

On December 15, 1967, the seven hundred foot Silver Bridge spanning the Ohio River at Point Pleasant, West Virginia, suddenly collapsed. Forty-six persons were killed.

During our cattle mutilation investigations carried out in Idaho, we learned that Fremont County had experienced 22 mutilations (including the draining of blood from many of the carcasses), all of which took place in a one month period, from the middle of September to mid-October, 1975. The entire area which had experienced the mutilations was devastated by a flood, the result of the unexplained bursting of the Teton Dam on June 5, 1976. Although only nine people died in the sudden flooding which ensued, several thousand head of cattle, the majority of the population of the area, were killed. Helicopters were used to transport surviving cattle to drier locations....

Man-made dams and metal bridges collapsing. The events foreshadowed by animal mutilations and paranormal events.

The point worth considering here is that "mutilations" occurred almost nine months prior to both events. Nine months happens to be just about the gestation period for both bovine and human organisms. Can those of us claiming to have open minds afford to overlook this unusual coincidence? Or does it instead make us want to look deeper into the possibility that ancient inherent energies may somehow interact with the more powerful recent "artificial" energies perpetuated across the planet by man to inadvertently provide ever increasing evidence of paranormal behavior? We are experiencing more and more reports of UFOs and other paranormal phenomena on our planet. Are these interference patterns caused by the interaction of "natural" and "artificial" energies, thus producing hologram-like manifestations? If the physiological effects resulting from emissions of high-tension lines, television and other artificial energies include hyperactivity, hallucination, decreased or altered reproductive abilities and emotional states characterized by high tension (note the significance of the term "high-tension" as we apply it here to emotional states), then we can better understand, perhaps, how our electromagnetically defined sense of reality can be so readily altered by experiences involving alternate, often unnatural interference patterns.

NATURAL POWER LINES

If we examine the Point Pleasant area a little more closely, I think we may find some strong reinforcing evidence to support my hypothesis.

Approximately 10 miles from Pt. Pleasant is a town in Ohio named Cheshire. In 1969, the Ohio Power Company announced plans to construct a 765 kv power line from Cheshire *straight* to Columbus and beyond, to a substation in the town of Maryville. From here it would continue on to contribute to the electrical needs of Detroit and Chicago. There have been reports from farming areas through which the line passes that cattle will not walk under the lines. Some farmers report cows calving at only about 10 percent their average yield. There are reports of cows losing their teeth prematurely. One researcher, who as a child lived in the area in question, notes, upon her return to the area:

> There were numerous reports of biological damage to people, animals, and vegetation under the line. A small grove of white pine trees showed poor growth and yellow needles. House plants and pear trees were reported to be dying. According to one landowner, horses running in his field under the line had all the hair and whiskers burned off their noses and several men working under the line had hair burned off their arms.... It may perhaps be coincidental that one of the eighteen families contacted in this survey had a child dying of leukemia. The disease was discovered after the child had been living for a year and a half under the high-voltage line.... All the reports of biological damage are brushed off [by the Ohio Power Company] as being mere figments of the imagination. (21)

A coincidental example of another 'figment of the imagination' is that Logan, Ohio lies about midway along this artificially created ley line which stretches from Cheshire to Columbus, and beyond....

Those who remember my reference to a town in Ohio which experienced a number of bizarre example of mutilations as well as other related paranormal phenomena will not be surprised to learn of that town's identity or location. According to newspaper reports, Logan experienced ten mutilations (five in the town and five in the county) between May 27 and June 11, 1976. Further documentation only serves to reinforce the multi-level paranormal manifestations associated with the phenomenon.

An eleventh mutilation was reported when a horse died (July 19-20) from a deep puncture wound in the side. A store owner interviewed in the area indicated a 400-500 percent increase in gun sales during a one-week period. Groups of local men, organized into armed vigilante groups, roamed the countryside, thoughts of bizarre religious cults flowing, like an electric current, through their imaginations. CB radios crackled with the news. A religious camp was terrorized by concerned citizens who discovered that what they had thought to be a burning cross was only the campers' version of an olympic torch. One man, his name mentioned in connection with the mutilations, was fired upon as he drove down a road. Rumors of figures in black robes or white robes circulated freely. Police received reports of the mutilations: a pregnant llama, two horses, a dog, chickens, a cow, a steer and four rabbits. A rumor that a buffalo had been mutilated was dispelled. Logan police, Hocking County Sheriff's Department personnel, and the prosecuting attorney's office issued a statement intended to address the county's 20,000 residents. Concerning itself with rumors of cult activity, it read in part:

> It appears that the circulation of rumors concerning this alleged group has created a dangerous situation. Within the last few days, residents of the county have been carrying firearms and other weapons in their cars supposedly for protection. Others have actually been taking vigilante type action.... This activity has reached the point where it is endangering the lives and property of innocent persons. (22)

Is it possible that the straight line between Cheshire through Columbus represents a natural ley line which has been seriously affected by man's artificial exploitation of energy? Because the area may reflect structural weaknesses along the stress axis of an area in which tectonic stress is accumulating (a part of the New Madrid fracture zone which extends from Michigan through Ohio and on down through Indiana and Illinois), it may serve as a natural area for the occurrence of unexplained phenomena. The man-made energy alteration may provide more frequent opportunities for increasing manifestations.

Historical incidents reinforce this hypothesis. Extending our straightedge-perfect line from Cheshire, past Columbus, to Bluffton, Ohio, we discover some very interesting parallels. Remembering the Ohio "airship" flap of 1897 and the associated simultaneous appearance of phantom cats and other paraphysical phenomena, we discover that several additional towns which experienced unusual phenomena at the same time also lie along this same line; within about 20 miles on either side of our hypothetical line (part of which the Ohio Power Company has preempted) lie the phantom-airship-prone towns of Coolville, Chillicothe, Logan, Lancaster, Baltimore, Columbus, Westerville, Sunbury, Bellefontaine, Kenton, Marion, Upper Sandusky, Dunkirk, Bluffton and Finlay.

As if we have not already saturated our minds with parallels, let me add one more very interesting observation to what we have seen so far. Dr. Persinger's computer findings also indicated a high correlation between peculiar archaeological centers and unusual animal reports. Kenton, Logan and Chillicothe all experienced phantom panther reports during the 1897 flap. More recently (March-May, 1977) the Bluffton area has re-experienced phantom panthers (23). Because Ohio is well-known for its unusual burial mounds and other archaeological structures, it would seem that we have another natural correlation.

One researcher of the paranormal has recently written a two-part article which speculates that holograms may well be inherent in the crystal structure of some rocks; and thus he suggests that the basis for visual manifestations occurring at ancient sites could represent the prior encoding of the images in stone. He includes an impressive visual comparison between the interference patterns of a hologram-producing "negative" and curious markings termed "cup and rings marks on a stone at Torbhlaron, Argyll, in the British Isles (24)."

These same concentric rings resemble the ripples sent out by an object falling into water. They also resemble the more recent photographs of underwater configurations at the bottom of Loch Ness. Analogies could be made to stone circles in general, as well as the ring marks found near alleged UFO landings or accompanying mutilations. Could it be that natural seismic activity, especially in conjunction with the continuous release of powerful "artificial" energies in the vicinity, somehow activate those interference patterns suggested throughout this paper?

Could it be that the natural electromagnetic state which constitutes that area's normal electric field is somehow altered? Research into spontaneous human combustion, yet another paranormal phenomenon which becomes manifest when people inexplicably burst into flames, has shown correlations with the Earth's geomagnetic fluctuation. One researcher studying the phenomenon finds that such paranormal phenomena often occur near peaks of geomagnetic variation (25). Another researcher is already attempting to correlate instances of spontaneous human combustion in England with ley line alignments already plotted in that country (26). Experiments conducted in Japan as well as the U.S. further verify the fact that certain paranormal phenomena, although elusive, can be measured. Preliminary hardware results indicate there are measurable electromagnetic effects involved with unexplained events. (It should be noted here that "spooklights," if my theory is correct, along with other paranormal events would naturally appear in close proximity to railroad tracks and other conductive materials. This appears, in fact, to be the case in many areas of the United States exhibiting these curiosities.)

What has energy developments during the past 80 years or so got to do with the present? What does the death of the buffalo and the subsequent exploitation of the earth's resources have to do with seismically active geomagnetic fault zones like the Rockies or high-tension, tectonically and emotionally stressful areas under Ohio power lines?

Although to some my thesis may seem highly speculative, I would submit if we allow ourselves the time and space in which to merge our technological capabilities with our ability to comprehend, we may yet discover hardware verification of what we have always intuitively feared. Perhaps the most persuasive scientific proof I can offer at this time has been recently voiced in an article in *Science News*.

> There is preliminary evidence that man's terrestrial activities may be affecting a region of space thousands of miles away. Several independent experiments by Stanford engineers have measured slight changes in the earth's ionosphere and magnetosphere that occur only during weekends. The ionosphere is the electrically charged layer of the upper atmosphere, off which radio signals bounce in long-distance communications and beyond which is the magnetosphere, an extensive region of space that envelops the earth and contains its magnetic field. Interpreting the results, Chun Gun Park expresses the experimenters' consensus conclusion that "there is no known weekly cycle in nature. It has to be a man-made effect."
>
> Antony C. Fraser-Smith, who conducted the first such Stanford experiment, has detected a slight overall weekend increase of the earth's magnetic field. Some of his data are derived from records that go back over a century, and he finds the effect persisting from the present until about 80 years ago. Although each of the other two experiments has detected disturbances in other aspects of the spatial regions, each of them corroborate the weekend behavior.
>
> The engineers involved suggest that the weekend effect is caused in part by the complex of power

lines that crisscross the United States. They base the hypothesis on some theoretical work done 20 years ago by Stanford professor Robert A. Helliwell. According to it, a small amount of radiation that leaks from the earth's surface into space can there provoke a disturbance about one million times greater than itself. This enormous amplification factor makes plausible the idea that man's piddling on earth could precipitate an effect thousands of miles removed in space. Furthermore, Fraser-Smith speculates, the appearance of the weekend effect seems to roughly coincide with the emergence of power lines in the United States, about 80 years ago. (27)

CONCLUSION

Many forms of artificially channeled and amplified energy currently permeate our environment. Manifestations of what have been previously referred to as paranormal, psychic or otherwise inexplicable phenomena may be instead seen as interference patterns resulting from man's perverse exploitation of indigenous energy flows inherent to nature. The fact that many of these manifestations occur consistently near microwave towers, high-tension lines, tectonic stress zones, railroads and other conductors or transmitters of electromagnetic radiation would tend to bear out this hypothesis. The interference patterns could, through a combination of seismic and emotional triggering, register (as it probably has throughout history) as an electromagnetic imprint capable of short or long term duration changes in the normal electrical field structure of the brain.

My approach here has been a holistic one because we may be dealing with holograms. We are certainly talking about a holistic energy. I would ask today that we, the influential representatives of many different disciplines, join hands, efforts and insights in order to make for a more holistically perfect organism consisting of the union of Man and Mind. It is only through a converging of the analytic and the intuitive that man and mind can act, and observe, as one. Mysticism and science have a common origin — an intuition; I suspect they also converge, in understanding. As an image, the ultimate, self-contained hologram of man and mind is unique and justly inspires a profound sense of awe: the hologram contemplates its self.

Those of us who investigate the Unexplained may, paradoxically, also serve as guardians of knowledge. As such we therefore face a tremendous challenge. The more skeptical of our critics have questioned the emphasis we place on unexplained phenomena. They ask why we dwell upon it when eventually it will all be explained or debunked, believed or disbelieved, anyway. Our answer must evolve from the very restrictions time and space impose upon our research.

It is vitally urgent, both Here and Now, to understand our direction as a species. That is why I have come here from my country to speak to you today. My country, like yours, is the planet. The reason why we should dwell on unexplained phenomena is so that we may develop a more comprehensive understanding of all potential levels of consciousness, and thus it affects our future relationship with the universe and all organisms within it. Buckminster Fuller has said that we presently have the capability of knowing the condition and whereabouts of every head of cattle in the country at any given moment. Why don't we? The "future," as some of us may already suspect, may be more fluid than heretofore realized; it may, in fact, have already flowed past us. We, as tourists, may have long ago unwittingly sailed past the point of no return on our way into an evolutionary cul-de-sac.

If that is the case we can, in passing, only smile at the prophetic words uttered by Thoreau, who may have answered our critics far better than could we when he made this observation regarding dwelling-places:

"Of what use is a house if you haven't
got a tolerable planet to put it on."

To this I would add only one more observation. A civilization, a culture, will be judged ultimately not only by what it does, but also for what it said. Historically, perhaps I speak for many when I tell you that everything I am saying has been said before. A lot of people, many civilizations, some isolated individuals, and entire cultures, have spent a long time getting us where we are. Let us not end our evolution here.



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SYMPOSIUM

Comments and Opinions

LETTER TO THE EDITOR

In reply to Harry Mongold's comment (see last issue's Symposium) to my article on "reality" ("What About Reality?" Vol. 10, No. 3): perhaps the reason why science has been unable to turn up any goblins, giants, or the philosopher's stone is due to the same reason they can't uncover a genuine extraterrestrial spacecraft and crew? These "quirks" in our reality are temporal and/or transitional — here now, gone later. We may unconsciously cause such manifestations to be a part of our reality core for a short duration. In some cases, however, the archetypes become so "fixed" that they become permanently attuned to our world.

If there is such a thing as alternative, diverging time lines, it may well be that giants, elves, goblins, Lord knows who or what, may have (and may still) exist(ed) at some point in the past. The fact that the human mind is complex beyond anything conceivable may also lend support to a notion that reality itself is utterly, and confusingly, multifaceted.

But despite these musings, I — like Harry — tend to enjoy all the niceties of our physical world. Of course, it may be that someday I'll sit back in some physical armchair and chuckle with my peers at the ignorance displayed by this remark.

—Curt Sutherly

* * * *

Errata: Vol. 10, No. 2: In William Whamond's article, "Little Green Men and the Law of Dynamical Similarity," p. 49, column 1, paragraph marked "5)," line 7: "... stress is the key ..." should read instead "... stress should be the key ..." Also, in Vol. 10, No. 3: Mr. Whamond's "Harmonics Diagram," p. 94, which begins with the words, "After reading ..." should have been written, "Before reading ..."

* * * *

IMPORTANT NOTICE

Please note SITU's new addresses. We have had to move from our Columbia, N.J. premises due to a legal ruling concerning the status of our lease and the ownership of the Ivan T. Sanderson estate. The situation is a complicated one, involving legalities that pre-date Ivan's death. Our new premises involve three different mailing addresses; these are printed inside the front cover of this issue. Please make a note of these changes and address all correspondence accordingly.

* * * *

MEMBERSHIP DIRECTORY

After years of wanting to permit members to communicate their common Fortean interests to one another, we thought we had the answer in the Membership Directory, which would provide the confidentiality so desired by some of our members. Many of us contributed time and effort generously to this project before it was discovered that the member entrusted with the lists was in fact using them for unauthorized purposes.

Now we are about to try again. Hopefully, the new method will eliminate such problems. Those interested in participating in a new Membership Directory should write **SITU/Membership Directory, c/o Martin Wiegler, 694 Stuyvesant Ave., Irvington, NJ 07111,** giving me their *membership number and area of interest* (be sure to include your return address). After July 1, when all the listings are in, I will compile a chart showing *only* membership number, state (or country) and zip code, and area(s) of interest. This will be sent to all members who have asked to be included. Upon receipt of the Directory, any member included in it may write any other member by simply putting the number of the member whom they wish to contact on the front of a small *unsealed* stamped envelope. Enclosing any message they may wish to convey, they then enclose the unsealed envelope in a larger one addressed to me. I will complete the member's address on the small envelope, seal it (after inserting a small statement to the effect that SITU is forwarding on the letter as requested), and send it on. Following this initial procedure, the members are free to write each other directly.

—Martin Wiegler

BOOK REVIEW

American Indian Myths & Mysteries by Vincent H. Gaddis, Chilton Book Company, Radnor, Pennsylvania, 1977. 220 pages, $8.95.

Vincent Gaddis has done his usual thoroughly professional job and has produced still another book of interest to Forteans, and on a rather neglected subject at that.

The book is divided into two parts. The first, under the general heading "The Historical Mysteries," deals with the origins of the Amerindians of both North and South America, cultural links with the Old World and the Orient, and the racial mixing that occurred as a result of visits and, in some cases, colonization by all sorts of people who arrived long before Columbus. The author draws on archaeological and anthropological evidence as well as Amerindian traditions and legends, and puts forward some intriguing theories that will certainly annoy the orthodox. I am dubious about his suggestion that Man, as a species, may have originated in South America, in part because he makes such a splendid case for the Amerinds having come from Atlantis. In fact, the material he presents on Amerindian cataclysm and flood legends, including the Mayans' *Chilam Balam,* constitutes the most telling evidence that I know of for the existence of that continent.

Part two, "The Mystical Mysteries," treats of such things as the mystery of the shaking tent, fire dancing, bulletproof Amerindian warriors, "magic," mental telepathy, some astonishing cases of precognition, and the "Curse of Tippecanoe" which has so far done in seven U.S. presidents. The last chapter, "The Great Purification," gave me the grues. It deals primarily with a Hopi prophecy concerning something that sounds most uncomfortably like a nuclear holocaust. And, as Vincent Gaddis says, "Judging by past performance, Hopi prophecies are not to be taken lightly."

Bibliographical references are keyed into the text and there is an index.

S.W.S.

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