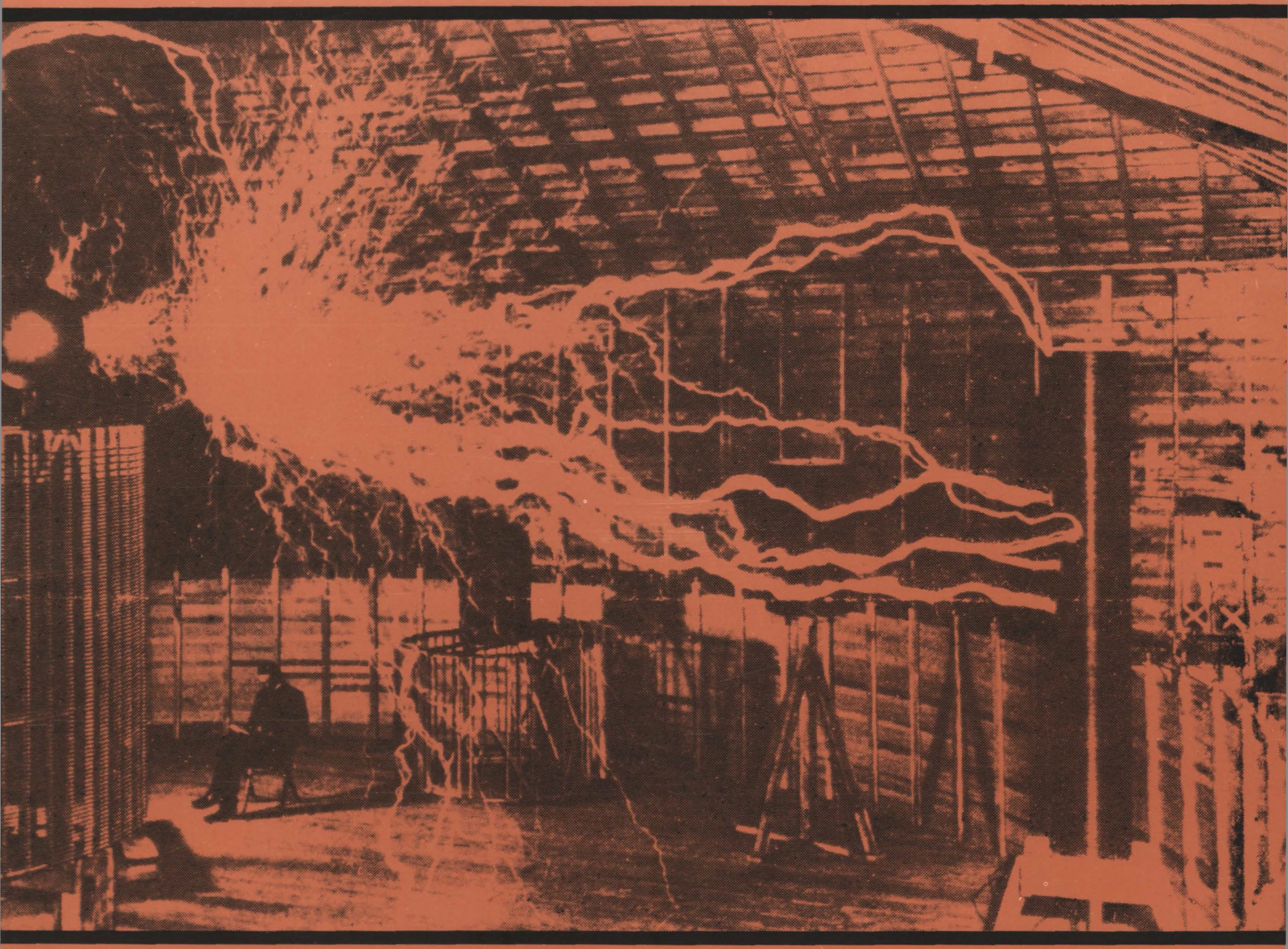
Pursuit®

'Science is the Pursuit of the Unexplained'



Nikola Tesla, seated in his Colorado research station, keeps on reading as 12 million volts of electricity surge overhead in one of his early demonstrations of "man-made lightning." See page 176.

Journal of SITU
The Society for the Investigation of The Unexplained

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1983

THE SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

Mail: SITU/PURSUIT, P.O. Box 265, Little Silver, NJ 07739 USA Telephone: (201) 842-5229

SITU (pronounced *sit' - you*) is a Latin word meaning "place." SITU is also an acronym referring to THE SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED.

SITU exists for the purpose of collecting data on unexplaineds, promoting proper investigation of individual reports and general subjects, and reporting significant data to its members. The Society studies unexplained events and "things" of a tangible nature that orthodox science, for one reason or another, does not or will not study.

You don't have to be a professional or even an amateur scientist to join SITU.

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THE QUARTERLY JOURNAL OF THE

Pursuit®

SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

'SCIENCE IS THE PURSUIT OF THE UNEXPLAINED'

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Cover: 1901 photograph of Tesla in his "lightning laboratory," reprinted by permission from Radio-Electronics magazine

Now It's Tesla's Turn

You may have asked yourself, "Why is it that we, a so-called Fortean organization, seem to give Nikola Tesla, the scientist and inventive genius, more attention than Charles Fort did?" After all, Fort and Tesla were contemporaries, and they carried on their investigations just a few hundred feet from each other in New York City for perhaps a decade.

Tesla had his fourth New York laboratory on the corner of Fifth Avenue and 40th Street — directly across from the main Public Library where Fort toiled for years until his eyes dimmed and he had to suspend his research in order to save what remained of his sight.

During the same period, Tesla and his secretary frequented the library reference rooms. While we may assume that Fort and Tesla were casually acquainted, if only to exchange a nod or a smile while passing in the hall, there is no evidence that the two men ever "met" to chat informally or exchange views. To the best of our knowledge, Tesla's name appears in only one place in the published works of Charles Fort. In chapter 32 of his book *New Lands,* Fort mentions "Tesla," not the "Mr. N. Tesla" or the "Nikola Tesla" that would come more naturally to Fort's peculiar journalistic style. The lapse was no discourtesy but simply reflected common knowledge. Readers of 1923, when the book was published, knew "Tesla" as people today "know" Einstein.

Both Fort and Tesla paid the usual high price of nonconformity. Their concepts were ridiculed and their ideas mostly ignored, especially in their latter years. Tesla's early successes were forgotten and

(Continued on page 149)

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A HISTORIC BREAKTHROUGH

by George Andrews

French authorities recently released the details of a UFO landing case which provides irrefutable hard scientific evidence that UFOs are physically real objects, that they cannot be explained away in terms of "earth lights" (piezoelectric phenomena generated by subterranean stress), and that they are not from this planet.

Trans-en-Provence is a little village near Avignon. The incident took place there at 5:10 p.m. on January 8, 1981. Renato Nicolai, age 55, a retired mason who is now a farmer, saw a strange aircraft land in his garden, where it remained for about one minute. It then took off and disappeared over the horizon.

Mr. Nicolai thought that it was probably some sort of experimental craft being tried out by the French Air Force, as he lives near the Canjuers base. He did not believe in flying saucers. That evening he described what he had seen to his wife Jeanne, age 52, when she got home from work. The next morning she went with him to look at the markings on the ground, then told a neighbor about the incident. The frightened neighbor informed the police.

A contingent of the Draguignan police came to Mr. Nicolai's farm. He described the craft to them as approximately 6 feet in height and 7½ feet in diameter. The color was a dull gray, like that of lead. The shape was flat and circular, bulging slightly above and below. The craft rested on small telescopic legs. There was no light, and no smoke or flames. There was no sound except for a faint whistling. It first appeared at a distance of about 150 feet, like a mass of stone falling. However, it came down lightly on the ground. He approached it, and could clearly see the craft. He had advanced about thirty paces toward it, when it took off at very high speed. When he saw the object from beneath, it was round and had four portholes.

The police reported that there was a circular outline about half to three-quarters of an inch deep and 7¼ feet in diameter, with skid marks at two places. The site had the appearance of a circular stain, being darker in color than its surroundings. The police collected samples of soil and vegetation along a straight line through the impact site, writing on each sample its distance from the impact site. Upon their return to Draguignan, they transmitted their report and the samples to GEPAN (Group for the Study of Unidentified Aerial and Space Phenomena) which is a branch of CNRS (National Center for Space Research, the French equivalent of NASA). GEPAN passed the samples on to the INRA (National Institute of Agricultural Research) and several other government research institutes for analysis. GEPAN personnel visited the site to take further samples on two subsequent occasions.

On June 17, 1983, after two and a half years of analysis, a bulky preliminary report which assembled data from the different laboratories was turned in. Other examinations have been conducted since then. The results are only now beginning to be made public.

Government scientists attribute the circular outline to a soil fracture caused by the combined action of strong mechanical pressure and heat of about 600° (about 1100° F.).

Dr. Bounias, Director of the Biohemical Laboratory at INRA, personally took charge of the examination of the plant specimens. He carried out the analyses in the most rigorous fashion possible. First he established samples from plants of the same species (alfalfa) taken at different distances from the point of impact. Then he and his assistants meticulously analysed the photosynthetic pigments (such as carotene, chlorophyll and xantophyle), the glucides, the amino acids, and other constituents. He found differences sufficiently important that the statistical significance of the results is irrefutable. Certain substances which were present in the close-range samples were not present in those taken further away, and vice versa. The biochemical trauma revealed by examination of the leaves diminished as the distance from the UFO impact site increased. Some of the plants had been dehydrated, but were not burnt or carbonized. The following year, control samples were taken from the site, which confirmed the changes made in the vegetation.

After completing the analyses, Dr. Bounias made this formal statement: "We worked on very young leaves. They all had the anatomic and physiologic characteristics of their age. However, they had the biochemical characteristics of advanced senescence (old age)! This bears no resemblance to anything known to exist on our planet." Dr. Bounias refused to speculate about the cause for the strange facts he had established, or to propose any explanation at all for them.

Professor Jean-Pierre Petit is a researcher at the National Center for Space Research who specializes in the study of magnetohydrodynamics, and who does not share Dr. Bounias's inhibitions. Professor Petit has been investigating UFO phenomena for twenty years. He declared that he would gladly exchange all research previously carried out during two decades for this one case because of the quality of the evidence involved. He stated categorically: "This is the first UFO case I know of which is scientifically acceptable. It is necessary to give serious consideration to the hypothesis of 'space-ship of unknown origin' because out of all the possible explanations, it is the one which fits best with the INRA laboratory results. This space-ship cannot be of terrestrial origin. If such an aircraft existed on this planet, we would know about it. No one on this planet knows how to make a craft capable of performing like a UFO. Therefore, all the indications are that they come from elsewhere."



Summarized from articles in *Liberation* (Paris), Nov. 14, 1983 and *France-Soir* (Paris), Nov. 19, 1983 by Jean-Yves Cargha, and Jan. 4, 1984 by Francois Carre; translation and summary by George Andrews.

My Fortean Vacation

A Comprehensive Report on a UFO Sighting

by Christopher W. Pepo

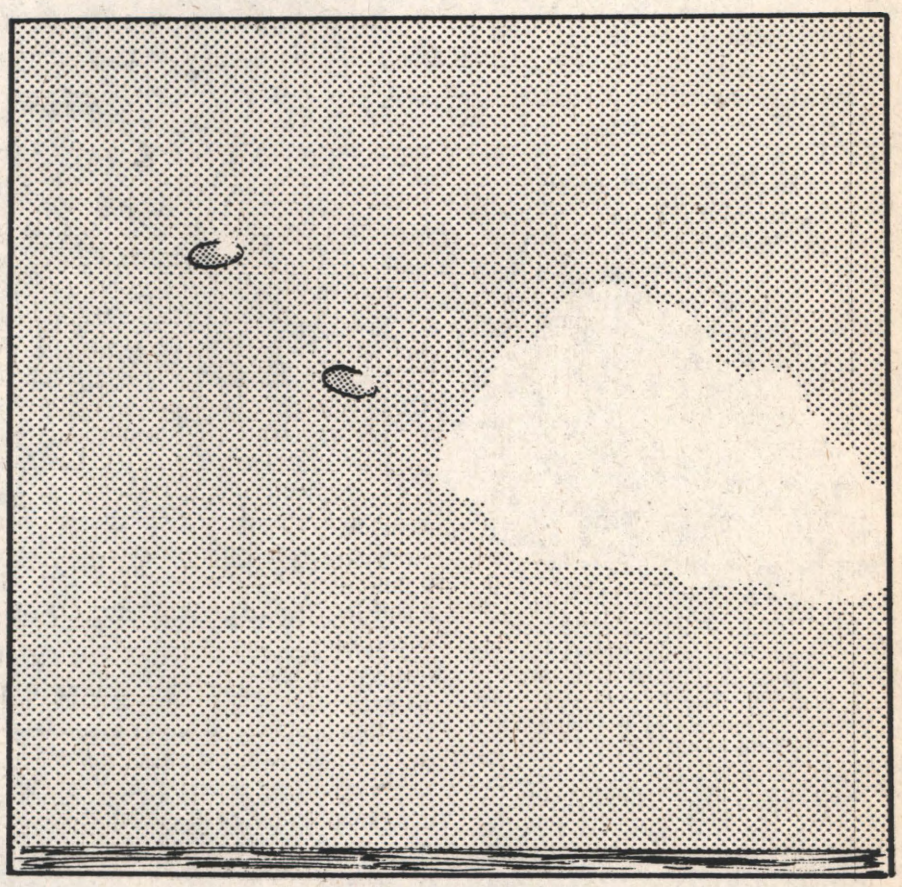
Drawings by the author

I am writing this a few days after the event, from notes and sketches done at the time. The date is August 5, 1983. I'm on the beach at Point Pleasant, New Jersey; nearest street off the boardwalk is Foreman Avenue. This is approximately the place where, in bright daylight on Tuesday, August 2, my eight-year-old son and I saw two metallic-looking discs in the sky.

Few people who don't know me will believe the following, because I am not a disinterested observer. I am a member of INFO, SITU and the International Society of Cryptozoology (IFC); I am also an illustrator of fantasy-related material, some of which includes such subjects as flying saucers. Naturally, I can't let what I saw go unrecorded, no matter how suspect my motives may seem to skeptics and fellow-Forteans alike.

Before beginning a detailed account of this happening, I should first make clear that I have read many books on Unidentified Flying Objects and believe they have indeed been observed, but it has always been my opinion that the majority of reports — those dealing with lights and electromagnetic effects — are caused by seismic piezoelectric activity, as studied and described by M.A. Persinger; and the cases of objects that appear to be more tangible are weather balloons or other misidentified man-made objects, and that encounters with UFO folk are self-delusionary confabulations or outright frauds. So, much as I'd like to, I still can't believe we're being visited by "ETs."

My primary reason for joining Fortean organizations was an interest in cryptozoology, not UFOs; I belong to that group which endorses zoological explanations for enigmatic-creature sightings, not the ethereal speculations espoused by many other Forteans. Generally speaking, I classify myself as a cautious believer in anomalous phenomena but a skeptic of most unorthodox theories which attempt to explain them. It was probably because of this attitude that I refrained from immediately taking a picture of the subject sighting; I missed a once-in-a-lifetime chance, wasting precious seconds in an attempt to rationalize and "identify away" an unknown.



No visible exhaust trail

Saturday, July 30, was the date of our arrival in Point Pleasant for a week's vacation. It was to be our third summer at "Canary Cottage," a small guest-house conveniently located one block south of Foreman Avenue and about 100 feet off the boardwalk. The next day, Sunday, was our first day at the beach, but a pea-soup fog and much seaweed in the surf made swimming unpleasant. On Monday, the arrival of August was heralded by a violent electrical storm; spectacular lightning flashes and thunderclaps affirmed our decision to avoid the beach for yet another day. One tremendous clap shook our cottage so hard as to set off the fire- and smoke-alarms. That night, the storm moved out to sea while we watched a vivid lightning display backgrounded by the indigo horizon; one memorable bolt sped from cloud to cloud, then downward to the ocean.

Tuesday, August 2, the day of the sighting, was sunny, the sky a clear blue, interrupted here and there by wispy puffs of small clouds, the sea filled with jellyfish washed inshore by the storm. About 4:50 p.m., while my wife went to get some sodas and my son continued digging in the sand, I decided to take a sunnap. The boy was busily shoveling about 30 feet inshore from the line of surf and I was sprawled out on our blanket, another 30 feet or so further inland. Lying on my back, feet toward the sea, I was gazing at the sky through a pair of polarized glasses when I spotted two silver-white, metallic-appearing, disc-shaped objects (see drawings). They were traveling north to south very slowly, approximately 20 degrees above the horizon. (I estimated

the elevation by segmenting the sky with a pencil from horizon to vertically overhead. The twin objects appeared to be about one-fifth the distance up from the ocean.)

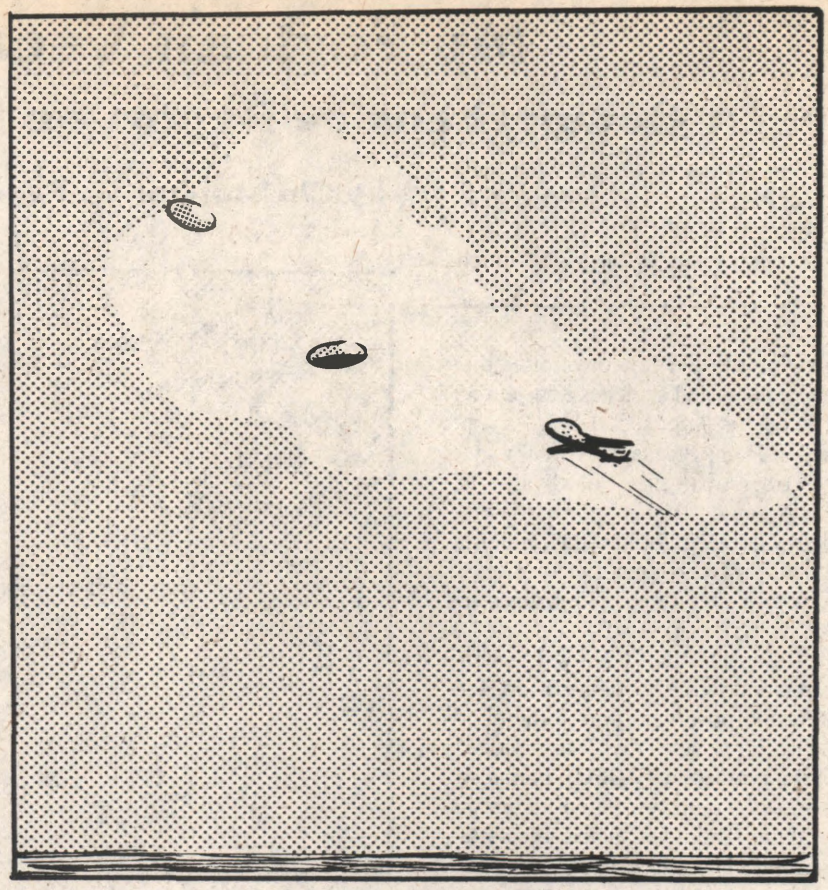
I lay there watching them, bemused and amused because I could plainly see their disc-like shape and their slightly wobbling motion. The lower object, just forward of the other, intermittently showed a reddish-black underside, just as any saucer-shaped object would whenever its bottom tilted away from the sun, which at that time of day was directly behind me.

My first thought was that the objects looked and behaved like all the "standard daylight discs" I had read about, and they probably were an escaped pair of those silver, oval or lozenge-shaped balloons that are sold on boardwalks everywhere. These balloons seemed to be receding, gaining altitude faster than they were traveling southward. Then, as I watched the two plainly discernible discs pass in front of a small cloud, my balloon theory was instantly refuted on two counts:

—The wind, strong all day, was coming from the *south*, as indicated by the brisk movment of clouds, so how could a couple of light, helium-filled toys be traveling *against* such wind? Yet that's what the two objects were doing.

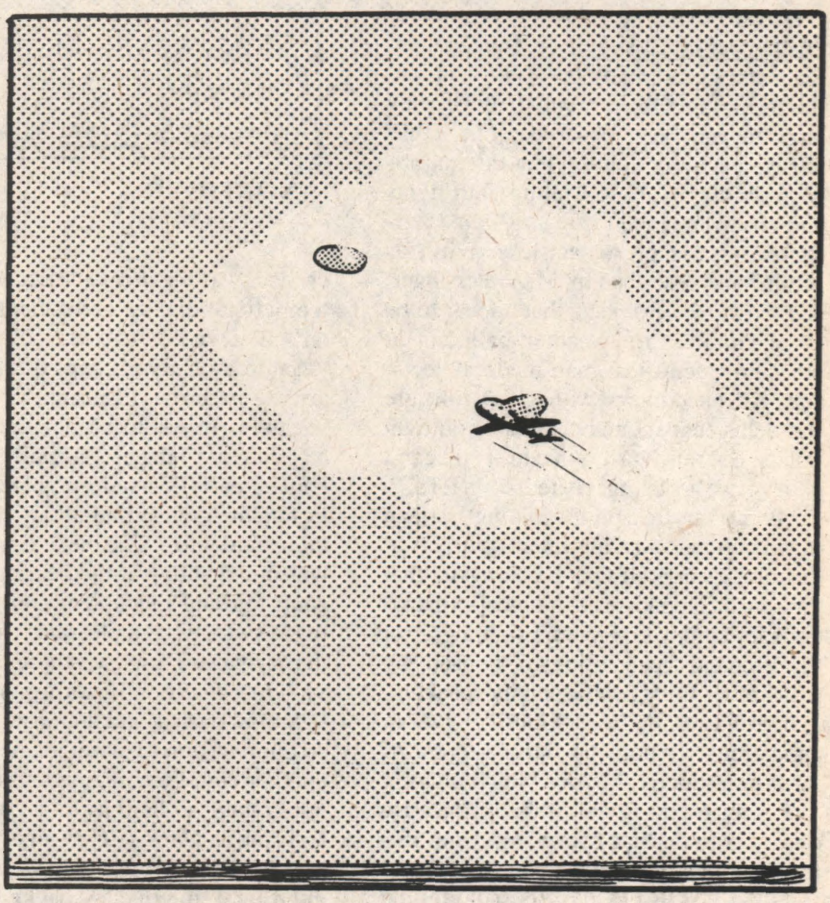
—As I stood up, startled by this observation and hoping to get a better look, a jet airliner (probably a Boeing 747, judging by the "big hump" up front) flew diagonally across and under the lower disc, only partially obscuring it and making its size a lot bigger than any kid's balloon I ever saw. The visual comparison was incredible: the disc's apparent diameter was about one half the jet's!

I called my son to come and watch with me. As we did, the two discs, now one half the size I first observed them to be, disappeared into the cloud. By then I had my camera out, ready and waiting to snap their reappearance. Neither one showed again. The next "appearance" was another jetliner which passed directly through the same cloud; the conventional craft looked to be about half again the size (diameter) of either one of the vanished discs. I also noticed something which looked like a star following the airliner; the star-shaped object was visible for only a few seconds as it paced the jet on a northward course toward the New York airports. When the cloud dissipated, no visible evidence remained of the star or the discs. I asked a woman nearby for the time; it was 5:07 p.m. I estimate the whole sighting incident consumed between three and five minutes.



NORTH **◄ WIND DIRECTION** **SOUTH**

Light reflections from upper surfaces of discs



NORTH **Jet partially obscures lower disc** **SOUTH**

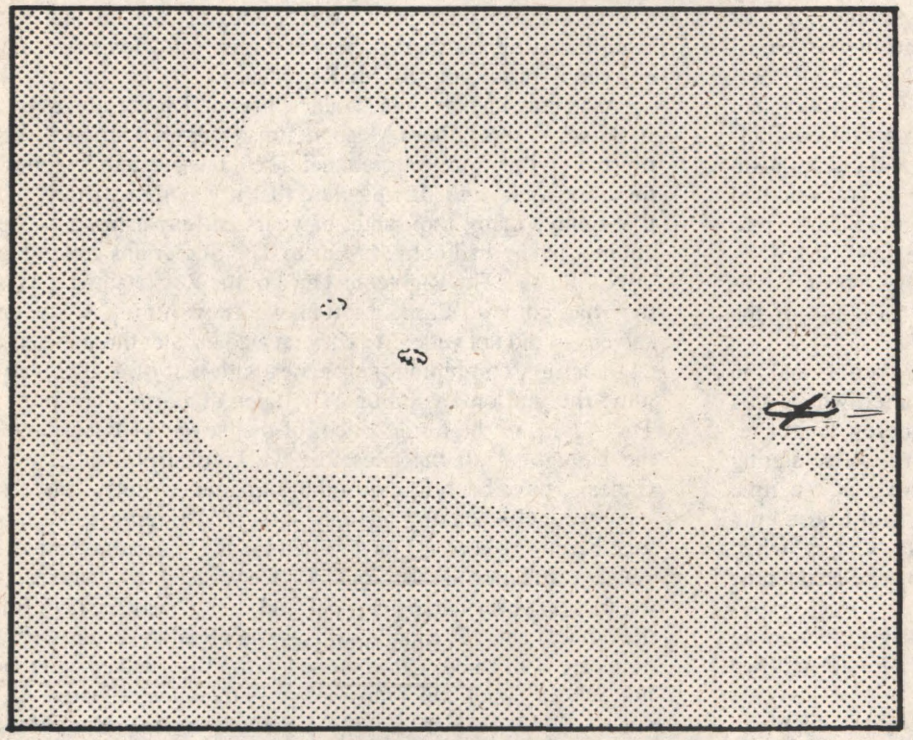
We stayed on the beach for another hour or so, observing seagulls, kites, and prop and jet aircraft of several kinds and at various distances. None could be mistaken for those discs. If any reader is interested in knowing more of what they looked like, I refer to a photograph in J. Allen Hynek's book, *The U.F.O. Experience,* as picturing a disc very much like the pair I saw, except the edges in my sighting were rounded and did not curve out to a rim. Hynek's photo, numbered 4&5 and designated DD-6, is credited to Warren Smith.

Now to top off this story with some more synchronistic events. The night of the sighting, after we returned from the boardwalk rides and arcades, we sat on one of the boardwalk benches to gaze out at the Atlantic and up at the star-filled sky for awhile before retiring. I had just begun to describe details of the disc-sighting to my wife, who had missed it, when my son and I at almost the same instant looked heavenward and saw a shooting star flash by, soon followed by a second, and then a third one that left a smoky, greenish trail. The third shooting star and a fourth which followed it were also observed by my wife.

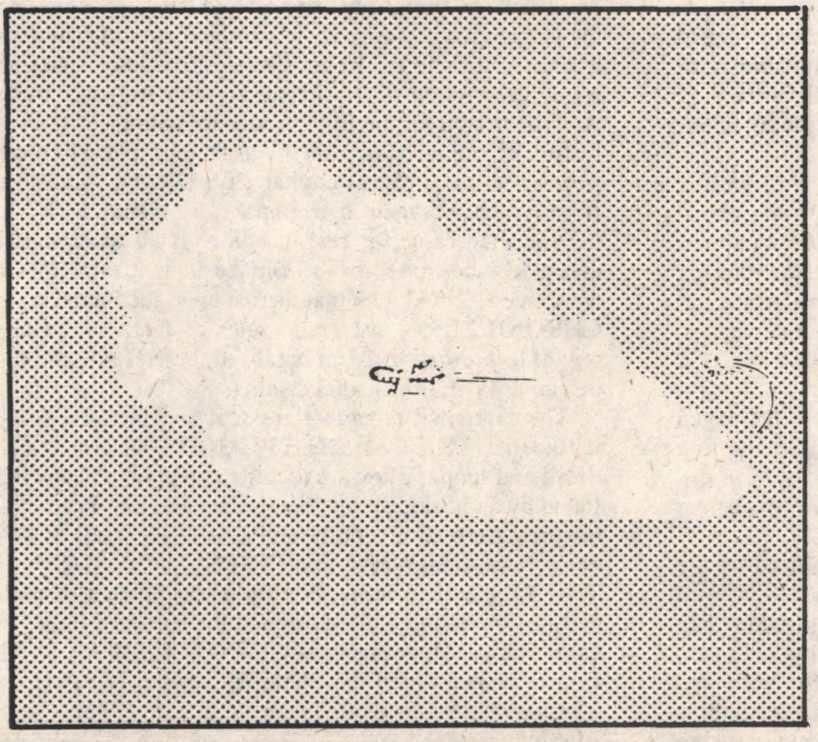
Today, as we were getting ready to leave the beach (about 6 or 7 p.m.), we heard a booming sound. It brought an exclamation from my wife and an attempted explanation from me. I was trying to pass it off as the noise of the surf stirred up by the incoming tide, when my son pointed to the horizon at sea on the southeast. All three of us watched and wondered about a large, dark puff of smoke that arose, then drifted off in a southerly direction.

Of what significance were these extraneous events? I do not know. Perhaps the sighting just made us more aware of, or more sensitive to, any unusual occurrence aloft or at sea.

And what do I think I saw? I can only say, Unidentified Flying Objects.



NORTH **Discs partially obscured by cloud** **SOUTH**



NORTH **Second jet partially obscured by same cloud. Star-like object follows.** **SOUTH**

Editorial

(Continued from Contents page)

his later research discredited or suppressed even as his prophetic imagination began to sketch outlines of the electronic New Age in which we now live. He was virtually "put out to pasture" before he could perfect and demonstrate many of his futuristic theories.

Fort also was derided and scorned, but his disciplined study of nature's anomalies and the length and breadth of his research won the admiration of a number of literary peers, some of whom gathered to form The Fortean Society. Scientists, however, have generally shunned Fort's conclusions in the books he published.

Now Tesla's work is being re-examined here and in other countries by both historians and scientists. Indications are that Tesla's laws of electromagnetism may answer some of the questions that Fort posed to his readers from his vast collection of data. And, this is where we come in.

—The editors

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Earth Chronicles and the Giza Forgery

by Zecharia Sitchin

"Come search with us" is the motto of the Ancient Astronaut Society. It is a search for the true interpretation of ancient monuments and ancient texts; it is an effort to look at ancient depictions and see in them what the ancient artist had really meant to depict. It is a study of mythology and archeology, of anthropology and geography, of astronomy and linguistics, of the Earth and of the Heavens.

Unfortunately, when the Society was formed, the notion had emerged that science and Ancient Astronauts are in conflict. This is as fallacious as the notion that Science and Creationism are contradictory. *I hold to the contrary.* Those of you who had read my books know that I have brought Bible and Science into harmony. Indeed, my conclusions — and the INCREASING CONFIRMATION THEREOF — would not have been possible without the scientific discoveries of the past and of the present.

Most of you, I assume, are familiar with my beliefs and the long road which brought me to them. It all started when, as a schoolboy, studying the Bible in its original Hebrew language, we reached chapter six of Genesis. We read the verse stating that the Deluge, the Great Flood, had occurred at the time "When there were GIANTS upon the Earth." But I raised my hand and said to the teacher: "Why do you say 'Giants' when the Bible says NEFILIM, which means "Those Who Had Come Down to Earth"?

Instead of an explanation I received a reprimand: You do not question the Bible, the teacher said, and told me to sit down and stop asking silly questions.

But that "silly question" was the seed from which my research and my writings had blossomed. For who indeed were the *Nefilim*? Why did the Bible call them so? And why were they described as "the sons of the gods"?

During the many years that followed, in which I engaged in biblical scholarship, I have looked up every available commentary on the first eight verses of Chapter six of Genesis. And I was stunned to come upon the following explanation by a 19th century Jewish scholar (called the Malbim):

> "In ancient times the rulers of countries were the sons of the deities who arrived upon the Earth from the heavens; and they ruled the Earth, and married wives from among the daughters of Man ... They were the sons of the deities who — in the earliest times — had come down from the heavens upon the Earth; and that is why they called themselves *Nefilim*, meaning 'Those Who Came Down'."

All this, the Malbim quickly added, were tales of the pagan gods — tales of no concern to a devout person believing in a one and only God.

But if so, why did the Bible include the tale in its ancient records?

The "pagan tales" to which the Malbim had referred are the ancient tales that our scholars call "mythologies" — a term which automatically suggests that they are myths rather than truths. We are all familiar with the Greek mythological tales, of Zeus and Apollo, Aphrodite and Athena; of the gods and goddesses who were so humanlike and yet supposedly immortal — ruled by twelve Olympians, roaming the skies, using lightning weapons, and affecting the course of men and nations.

Those who have read my first book, THE TWELFTH PLANET, know that the Greeks were relatively latecomers to the realm of such beliefs. Before them were the Assyrians and Babylonians, Hittites and Egyptians. They all worshipped gods overseen by a pantheon of twelve, gods of Heaven and Earth. And they all drew their beliefs and their knowledge from one common source: the SUMERIANS.

As is now known and established beyond doubt, it was there, in Sumer — in southern Mesopotamia (today's Iraq) — that our present civilization, religion, sciences, laws — had begun. Six thousand years ago. It was there that it was first written down that many, many thousands of years earlier, astronauts from another planet had come to Earth. The Sumerians called them DIN.GIR — "The Righteous Ones of the Rocketships." When they had come to Earth, Man as we know him — we, *Homo sapiens* — did not yet exist. They created us later through genetic engineering, combining their genes with that of Apewoman to jump the gun on Evolution. The tales of Earth's creation, of The Adam, of the fertile Eden, of the Tower of Babel, and of the Deluge — all the tales that we know from the Book of Genesis, have been found in the Sumerian writings, inscribed in a wedgelike script on clay tablets. Bringing those texts together in my books, I have called them The Earth Chronicles.

As a student of archeology, I never ceased to be amazed by the fact that every archeological find in the Near East confirms the biblical data. The names of Egyptian Pharaohs and Assyrian kings are confirmed. Cities named in the Bible have been found not only in Israel and Transjordan — the ancient lands of Canaan — but also in Egypt, Lebanon, Syria, Asia Minor, Mesopotamia. Tools, weights and measurements, trade routes, customs, clothing, industries — everything the Old Testament describes has been found to be valid, true, accurate; and even the fabled land of *Shine'ar*, where the Tower of Babel was built, was proven to be the Hebrew name for Sumer, and the Tower a true description of its ancient ziggurat or "step pyramids." And the reason for the Bible's concern with the history and prehistory of that land was that it was the birthplace of the Hebrew people: its magnificent capital city, UR, was indeed the city from which Abraham had migrated to Canaan.

And then came the real question: If all the events, people and places described in the Old Testament in *historical* times were true — could it be that their source, the Sumerian EARTH CHRONICLES — were also tales of fact, not of fiction, in regard to *pre-history* — in regard to the Nefilim and their having come to Earth in rocketships?

The Sumerian records — textual and pictorial — as I first unfolded in THE TWELFTH PLANET — are amazing in their detail and scope. They are recorded on clay tablets which were found by archeologists and deciphered and translated by scholars laboring for over a century and a half. They tell us WHO had come here, and WHY, and WHEN; and they tell us FROM WHERE they had come. Not from some planet in another star system, travelling endless time at the speed of light. No; they came from another planet in OUR OWN SOLAR SYSTEM — from a planet which the Sumerians called NIBIRU (meaning "Planet of the Crossing") and the Babylonians later called *Marduk*.

Many — not hundreds but thousands — of astronomical texts

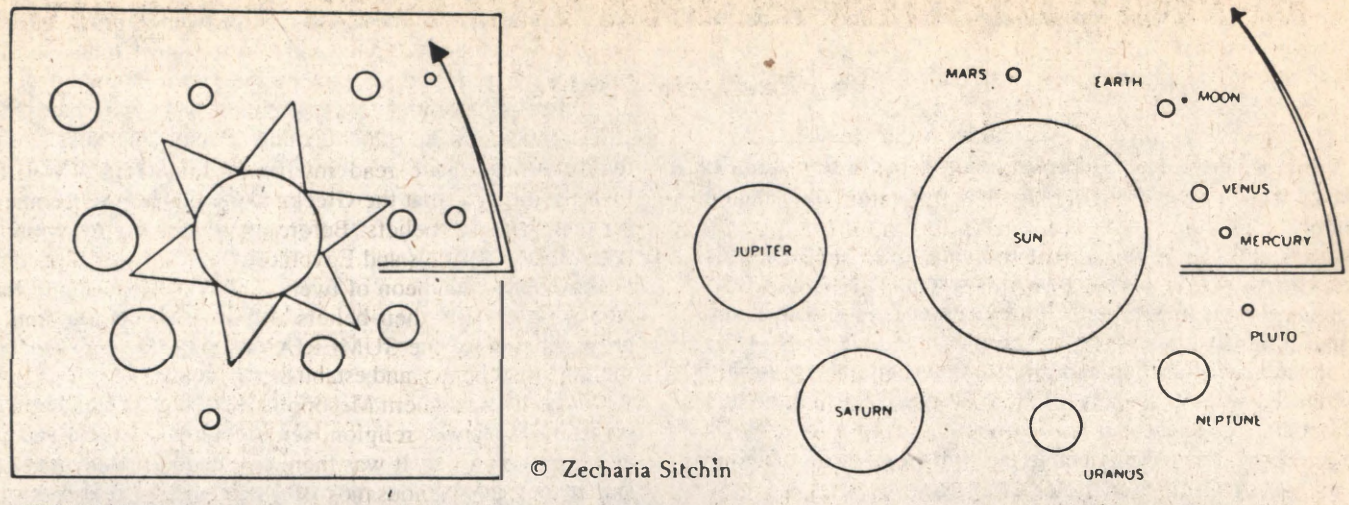


Fig. 1 Ancient clay tablet with author's interpretive diagram shows Sumerian concept of a twelve-member solar system (Sun, Moon, and ten planets).

and records have been found in the sands of Mesopotamia. Many of these texts tell us that the Solar System has *twelve* members — the Sun; the Moon (for well-founded reasons, the Sumerians considered it a celestial body in its own right); and *ten* — not nine — planets. The one-more planet was the planet they called NIBIRU. They also described this 12-member Solar System pictorially (Fig. 1).

A long and well-known text, recited in ancient times during the New Year festival, summarized Sumerian knowledge of the creation of the Solar System. It is a cosmogony that answers more puzzles than any modern theory! And it relates how a celestial body coming from outer space was increasingly drawn into the center of our Solar System, leading to a collision with an olden planet called TIAMAT. It was as a result of Tiamat's breakup that the Earth, the Asteroids and the Comets have come about. It was the celestial event as a result of which the invader — NIBIRU/Marduk — was forever caught in a vast elliptical orbit in our solar system, becoming the twelfth member of that system. In my book THE TWELFTH PLANET I produced as evidence a Sumerian pictorial depiction showing the Sun — not the Earth — in the center, surrounded by all the planets known to us today, *plus one more*. The amazing thing about this ancient depiction is of course the fact that until 150 years ago *we* did not know of Uranus and Neptune, and until fifty years ago we were not aware of Pluto... But the Sumerians knew of them 6,000 years ago!

There are texts dealing with interplanetary travel, from the Home Planet of the Nefilim to Earth. In those texts the Earth is called THE SEVENTH — a designation possible only if one counts as he travels from the outside in. In these texts, the planets encountered are named and described:

Pluto, the first to be encountered, was called "Guardian of the Upper or Outer Part" of the Solar System;

Neptune's name meant "Planet of Swamplands;"

Uranus, called "The Twin" — as indeed it is a twin of Neptune in size and appearance — was called "Planet of Bright Greenish Life;"

Saturn, the giant planet, was called "The Great Destroyer;"

Jupiter was called "True Guide in the Heavens;"

Mars bore a name indicating that it has water upon it; And at the end of the space voyage there was *Earth*, the Seventh Planet.

I want you to join me now in skipping over the thousands of years. I want you to switch to the present, to N.A.S.A. and Cape Canaveral, to Mission Control Center in Houston, to the manned flights to our Moon and to the incredible feats of the unmanned spacecraft that had probed Venus and Mars, Jupiter and Saturn; to the U.S. Naval Observatory in Washington and to other sites of telescopes and computers; even to our television screens, as man and machines perform the miracles of showing us worlds millions of miles away from us.

And what do we see? We see *confirmation of every concept and every notion, every fact and every detail recorded in the Sumerian clay tablets!*

Let us take the simple fact of a planet having its own satellites. Mars, we now know, has two of them; Jupiter, at least 13; Saturn as many as 23; even far-away Pluto has its own large moon. Now, how could man thousands of years ago — without telescopes or spacecraft — even conceive of the idea that a celestial body, like Earth or other planets, could have smaller bodies revolve around it? Such a notion is an utter impossibility.

Yet the fact is that the Sumerians knew that a planet can have satellites, and even more than one. Nibiru/Marduk, they wrote, had seven satellites when it entered the Solar System. Tiamat, the planet that was destroyed, had eleven.

Based on recent spacecraft explorations of Saturn, scientists now consider its biggest moon, *Titan*, to be a planet-in-the-making that did not (or not yet) detach itself from its mother planet (Titan is the size of Mercury). Scholars are of the opinion that *Pluto* was once a satellite (of Neptune, they think) which did manage to detach itself by some unknown force. And — lo and behold — some astronomers now even think that our Moon was a celestial body in its own right that got caught by Earth!

Well, that is exactly what the Sumerians have stated in their New Year's text. And they also state that Pluto was a satellite — not of Neptune, but of Saturn; and that it was the invading Nibiru/Marduk which caused it to be detached and to have its own, very unusual orbit...

Scientists speculate how life on Earth might have begun, and some of them — including Nobel prizewinners — have offered the bizarre possibility that life was implanted here from elsewhere. Well, there is nothing new in that either, for the Sumerians wrote that life was brought into our Solar System by Nibiru/Marduk.

But to have life on it, and to have been the home planet of highly intelligent beings who could engage in space travel, Nibiru had to have the three prerequisites for such life: heat, water and an atmosphere. How could a planet which sails off into the deep freeze of outer space, so far away from the Sun, have any of these? When my conclusions were doubted on this point, all I could answer was that the Sumerians described Nibiru as a watery planet, a radiant planet — that is, a planet which has its own heat source.

It sounded implausible — until the discoveries by the spacecraft of NASA. Again, the Sumerians appear to have known what they wrote: Instead of cold, dead planets, NASA's spacecraft found worlds with heat, with water, with atmosphere! Near Jupiter, a mysterious heat source twenty times hotter than the Sun was found. Jupiter and Saturn, and Uranus and Neptune too, were found to generate their own internal heat. And all of them, plus some of their satellites, had atmospheres. Some still produce new ones by volcanic activity. The spacecraft actually photographed volcanic eruptions in action! These eruptions are also, of course, evidence of internal heat sources. Titan, for one, was deemed to be a planet which may or could have some forms of life on it.

And, above all, there is *water — water, everywhere!* Mostly frozen, in the form of ice crusts and ice sheets that melt and grow with the seasons; and in all probability *flowing water* below the surface of both planets and satellites.

Mars, the evidence clearly shows, once had flowing waters on its surface, which shaped its topography: rivers and lakes and even oceans; and it may still have underground water aplenty. (It may be worth mentioning here that a good part of our own water on Earth is also found underground.) Europa, a Jupiter moon, has a crust of water-ice and may have (I quote from the NASA reports) "ice-covered oceans." Another Jupiter moon is alive with volcanoes which spew out gases including water-vapor. A moon of Saturn is covered with snow and particles of water-ice — and so on and on.

And what about the supposedly dead planet Uranus, which the Sumerians described as having water and presumably vegetation which gives it a greenish hue? Here is what the NASA scientists reported two years ago as the spacecraft Voyager 2 left Saturn and was hurled towards a rendezvous with Uranus in 1986: Uranus, they said, has a rocky core probably *surrounded by a mantle of water;* its atmosphere reveals the presence of hydrogen, helium, carbon, nitrogen and oxygen ... and its appearance is *"bluish-green."* These are the exact Sumerian words!

Last month, the space program marked a unique milestone. For the first time, a man-made object — the unmanned spacecraft Pioneer 10 — crossed over the orbits of the outermost planets, and headed into unknown space; but its mission has not ended. It may yet perform one more task: it may provide proof of the existence of the one-more planet.

Three years *after* my first book was published, astronomers at the U.S. Naval Observatory in Washington determined that Pluto has a moon. This has meant that the mass of Pluto is smaller than hitherto believed. This in turn meant that Pluto alone cannot account for gravitational disturbances in the orbits of Uranus and Neptune, as well as its own. This means that there is one more celestial body orbiting beyond them.

As the two Pioneer Spacecraft, Pioneer 10 and 11, are heading into space in different directions, NASA scientists hit on the idea that if they could measure the gravitational pull that emanates from beyond Pluto, they could provide a clue to the identity of the mysterious celestial body. If the pull would be about equal, it means a very large body — perhaps a "dark-star" type of object. But if the pull will be stronger on one spacecraft and weaker or hardly noticeable by the other, it means a smaller body of planetary dimensions.

Most astronomers believe that what will eventually be found WILL BE A PLANET. I can inform you that, in private communications, I am advised by the NASA team that as of two weeks ago, Pioneer 10 had *not* reported back any pertinent data. This is not bad news; it is good news; it means that the eventual gravitational pull that will be measured, will be reported by one spacecraft only (Pioneer II) and not by both. This means A PLANET! I can also report to you, based on private com-

munications, that the astronomers at the U.S. Naval Observatory do not take seriously the speculations about "dark stars" and "black holes" out there; they ARE ANTICIPATING A PLANETARY DISCOVERY.

As you know, the person who first comes up with the evidence of a new celestial body has the right to name it. Some have asked me whether I have or will claim this right. My answer is, that the planet has already been named. The *Sumerians* had named it; they called it NIBIRU.

What is the significance of all that?

The significance lies in the simple fact that the Sumerians had no way of acquiring all their amazing, yet accurate, knowledge of astronomy on their own. Indeed, they themselves state that all that they know was told them by the astronauts who had come from Nibiru.

This, then, is the significance: *If Nibiru exists — ancient astronauts exist!*

And if the Sumerian tales of the astronauts' coming to Earth were true, then the rest of their tales were true: Records that tell us how they came here, and who their leaders were; how two brothers vied for the love of their half-sister; how their sons fought for control of Earth. Tales that show that the reason for their coming was the need for gold — gold particles to ensure their survival on their own planet. That they first tried to obtain it from sea waters, but had to revert to back-breaking gold mining.

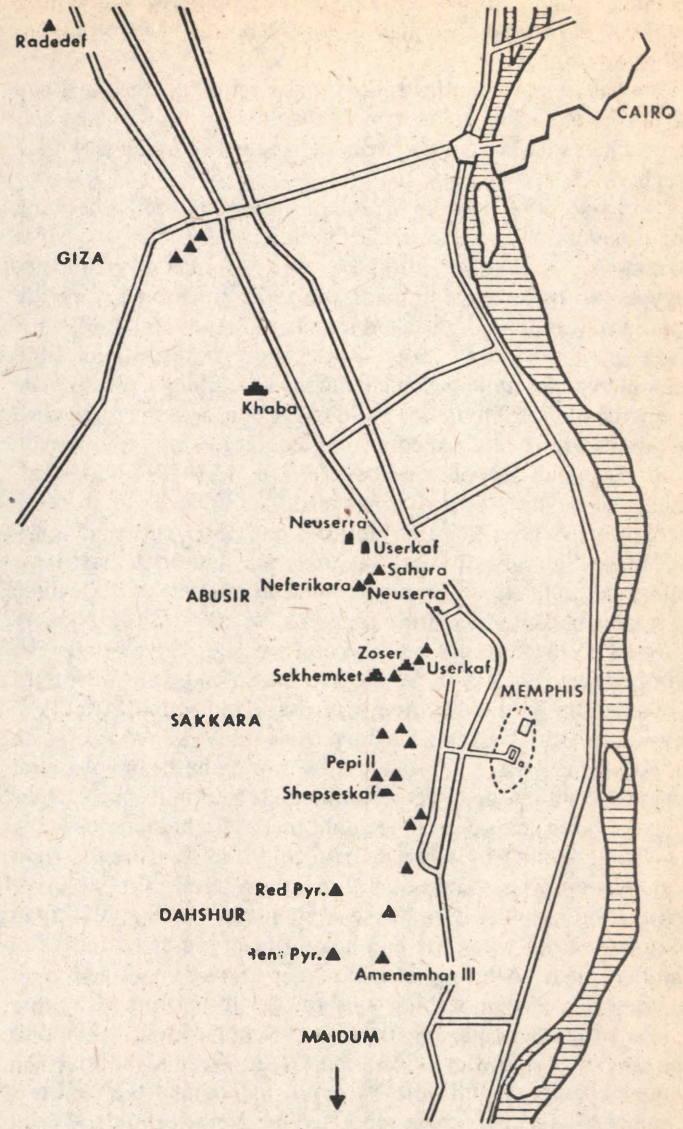
But the rank and file astronauts eventually mutinied, and their scientific and medical experts then created a "Primitive Worker" — the biblical Adam, "Earthling" — by fertilizing with their male sperms the egg of an Apewoman. The procedure, which called for re-implanting the fertilized egg in the wombs of female astronauts, not back in Apewoman — *preceded by 300,000 years* the just-announced successful "Transferred Embryo" technique developed in California. The detailed Sumerian texts describing the procedure sound like an article from an ancient edition of the New England Journal of Medicine...

The mingling of astronauts and Earthlings then followed, and the Deluge — all described in greater detail than in the Bible. It wiped off the face of the Earth all that the Nefilim had built on it, including their Spaceport; and when it was over, all had to be started all over agan.

This is where my second book, THE STAIRWAY TO HEAVEN, picks up the story. It shows that the post-Diluvial Spaceport was in the Sinai Peninsula, and that both Sumerian kings and Egyptian Pharaohs sought to go there to be taken aloft — actually or symbolically — so that they too could escape mortality by joining the "gods" on their planet.

As before the Deluge, a triangular or arrowlike Landing Corridor leading to the Spaceport had its apex on the twin-peaked Mount Ararat. Its southeastern anchor were the two highest peaks in the Sinai peninsula. But the Nefilim could not find the necessary twin-peaked northwestern anchor in the flat topography of Egypt. Their answer, I have suggested, was to build two artificial mountains: the two great pyramids of Giza.

For centuries man had wondered at the size and magnitude of these two artificial mountains, and at the complexity and mystery of the inner structure of one of them — sloping passages, enigmatic niches, precisely positioned chambers and other features which can be explained only by the familiarity of the builders with astronomy, geography, mathematics, geometry, trigonometry, gravity and — of course — structural engineering. Together with the smaller Third Pyramid and the adjoining Sphinx, the Giza complex had stood unique and unyielding to the ravages of man, nature and time. The ancient Egyptians



General location of the many pyramids of Egypt

deemed these pyramids to have been "stairways to heaven," and the Sphinx to have protrayed the face of the "Falcon-god of the Horizon." YET, as every textbook written in the past 100 years will tell you, the Great Pyramid was built by the Pharaoh Cheops (*Khufu* in Egyptian); its great twin by a successor of his, Khefren (*Khafra* in Egyptian) who, these books say, also built the Sphinx; and the smaller Third Pyramid was built by the Pharaoh Mycerinus (*Menkara* in Egyptian) who ruled after them.

Just as the notion that our Sun has only nine planets had conflicts with the ancient information of ten planets (making up a system of *twelve* with the Sun and Moon), so did the accepted notion that human Pharaohs had built the Giza pyramids conflicted with the Sumerian and Egyptian evidence that the post-Diluvial spaceport was in the Sinai peninsula.

To solve the problem, I engaged in extensive research. On the one hand I had the Sumerian Chronicles — such as the Epic of Gilgamesh — and the Egyptian Pyramid Texts, as well as pictorial evidence from the Egyptian Book of the Dead. The evidence, which I reproduce in my second book, THE STAIRWAY TO HEAVEN, is unambiguous. The Spaceport WAS in the Sinai peninsula; the Sphinx gazed in its direction precisely on the thirtieth parallel, and the twin great pyramids were part

of the Landing Corridor. And on the other hand were the textbooks of nowadays, saying Cheops, Khefran, Mycerinus ... Who was right?

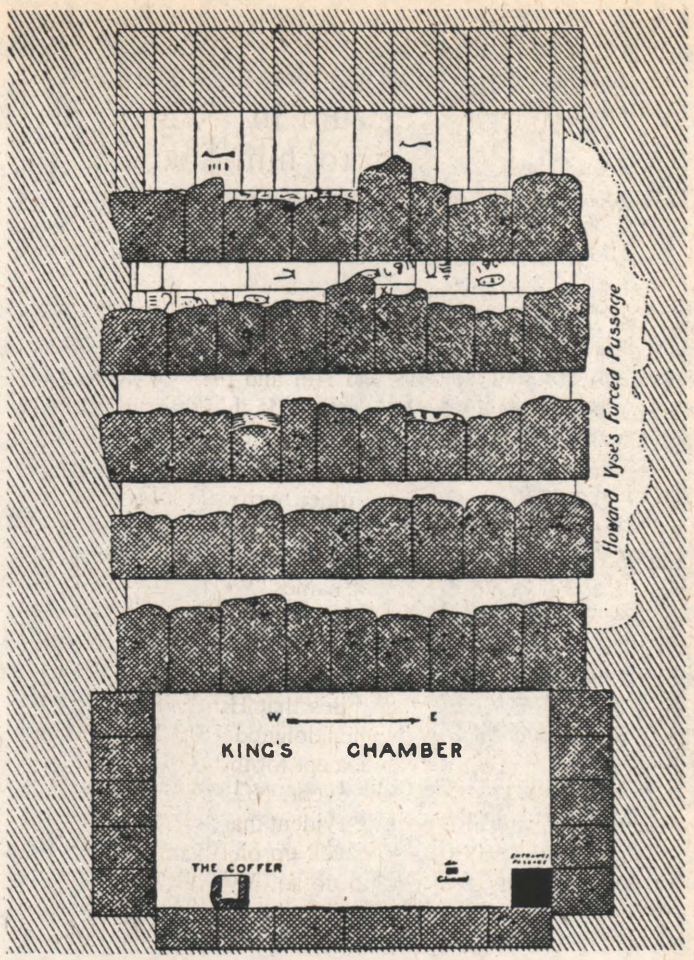
Just as in matters of astronomy, so in this regard too, I had no doubt: *the ancients knew more than we do,* for they had better teachers then we do: they had the Ancient Astronauts as their teachers...

So I set out to find out WHO and WHY had brought about the assumption of Pharaonic builders of these particular pyramids. Now, as you all know, there are many pyramids in Egypt. With the exception of the Giza pyramids, they are smaller, crumbling or decayed structures. And quite unlike the Giza pyramids, they contain decorations, paintings, and hieroglyphic inscriptions which, among other things, clearly state the name of their Pharaonic builder. By contrast, the three Giza pyramids are totally naked — no decoration, no painting, no coloring, no inscription whatsoever. Well, ALMOST no inscription whatsoever. And this brings me to the FORGERY that was perpetrated within these pyramids some 150 years ago.

What I found out was that textbook author *X* based his references to the three Pharaonic rulers as builders of these three pyramids because the earlier textbook *W* said so. Textbook *W* referred to the writings of the known earlier Egyptologist *V*; *V* relied on the works of *U*; *U* of *T*, and so on backwards, until I reached the virginal source, so to say, and found Mr. "A." He was a British Colonel named Howard Vyse who came to Egypt in the 1830's. Fascinated by stories he heard of secret chambers within the Great Pyramid and the Sphinx, he saw visions of fame and riches if he could find these hidden treasures. A wheeler-dealer by name of *Hill* told him that for the right sum of money he could obtain for Vyse a permit for exclusive excavation rights at Giza. Vyse went along, ousting the Italian excavator from whom he had heard of the secret chambers in the first place. After more than a year of hard work and great expense, Vyse had nothing to show for his efforts.

Running out of money, time and workers, Vyse resorted to the use of gunpowder within the Great Pyramid. Above the largest chamber within the Pyramid, nicknamed the "King's Chamber," a narrow space supported by granite beams had been discovered some seventy years earlier by an explorer named Davison. The explosives used by Vyse revealed a crack in the ceiling of Davison's chamber (as it came to be called); and this in turn led to the discovery by Vyse of four more narrow spaces or, as he had called them, "Chambers of Construction" above Davison's Chamber.

Now, Davison's Chamber was bare and barren as all the other chambers and passages within the Great Pyramid. Vyse too — to judge by his own journals — had found the other upper chambers to be so. In each case, he sent Mr. Hill to crawl into these chambers with brush and paint to inscribe within the chambers the names which he gave them — first, quote, the glorious name of Wellington, unquote; then that of Lord Nelson; then of a visiting dignitary, Lady Arbuthnot; and then of the British Consul, a Col. Campbell. In each case, after the passage of a day or more after the discovery of a chamber, other markings — "masons' markings" per Vyse — were suddenly discovered. And finally, in front of assembled witnesses, there were found among the markings, cartouches bearing the hieroglyphic name of Cheops. Ever since then — the year was 1837 — the textbooks began to report the *myth* that it was Cheops who had built the Great Pyramid. This, my friends, *and this alone,* is the basis for the ascribing to the fourth dynasty Pharaoh Khufu the construction of the Great Pyramid. This has so remained, incidentally, although the two leading Egyptologists of the time, Samuel Birch of the British Museum and Carl Lepsius of the Berlin University, both found inconsistencies and errors in the hieroglyphic markings, including the fact that not one but two royal names appeared to be written on the walls...



Inside the Great Pyramid, Howard Vyse's "chambers of construction" are shown above the King's Chamber.

Flushed with its success, the same team turned to the other structures at Giza. And, lo and behold, the same team came up with the WRITTEN evidence that the Pharaoh Mycerinus (Menkara in Egyptian) had indeed built the *Third* Pyramid!

This second feat was achieved by discovering — in rubble already searched previously by others — of the remains of a mummy, and of its wooden coffin. And the coffin bore an inscription in hieroglyphics, including the royal name Men-Ka-Ra...

Some — but not all, mind you, NOT ALL — *recent* textbooks will include blushingly a short paragraph. If you happen upon one of these few textbooks, they will mention *in passing* that after radio-carbon dating had been developed in the 1930's, the remains of the mummy and of the coffin were tested. The carbon dating revealed that the deceased had lived in Christian times — not some two and a half millenia earlier; and that the coffin was from a much later dynasty, not from the early Fourth Dynasty.

So, it is clear, *someone* had put together a wrong coffin remnant with a more recent skeleton, brought them into the pyramid, hid them in the rubble — and, when witnesses were present, *"found"* them to claim a glorious archeological and Egyptological discovery!

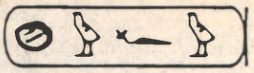
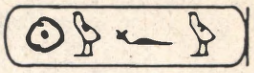
In the course of his research, Sitchin managed to see the Hill facsimiles in the British Museum in 1978. It then became evident to him that the inscription of the Pharaoh's name was not just a forgery, but a clumsy forgery. Instead of spelling out  (**KH**-u-f-u) the forger wrote  which reads **RA**-u-f-u.

Fig. 2

And who were the so-called discoverers, the perpetrators of this fraud? The same Vyse and Hill and their helpers...

This then led me to the question: If this team could have perpetrated one archeological fraud — could they have also perpetrated an earlier one? In other words, could it be that Vyse and his helpers found also the other narrow chambers bare of any inscription, but that as Hill had gone in to write with red paint the "glorious names" of Wellington, Nelson etcetera, had also added a couple of ancient names??

Following the leads as a detective, my suspicions grew the more the true events and personalities had unfolded. The clincher came when, after much searching, the British Museum found for me the actual facsimiles that Hill had made of the inscriptions, and which Vyse then donated to the Museum with great fanfare. It appeared that except for the German Carl Lepsius a couple of years after the event, NO ONE had looked at these facsimiles. It also became evident that NO ONE had gone into the narrow chambers to check up on Vyse's claims; and that when Lepsius had tried to do so, Vyse stopped him.

When I examined the facsimiles, the act of *forgery* became evident. Because Mr. Hill, ignorant of Hieroglyphics, had written in not only two names instead of one, but had also MISSPELLED the key name, *KH-u-f-u*, writing instead *RA*-u-f-u (Fig. 2).

I thus reached the conclusion, that Vyse had NOT found the name of Cheops, or of any other Pharaoh, inscribed inside the Pyramid; and that it was his sidekick Hill who had perpetrated the forgery in his behalf.

If I am right, then the way remains open for my claim that the Nefilim, not the Pharaohs, had built the Giza complex. If I am right, then a major cornerstone of Egyptology and Pyramidology has been shaken loose, requiring major textbook revisions. IF I AM RIGHT ... *IF*... But am I right? Apart from my logic and circumstantial evidence, is there other proof — an eyewitness, perhaps?

Needless to say, I have expected no one who may have lived 150 years ago, and been to Egypt in 1837, and present at the pyramids, and privy to Vyse's and Hill's schemes — to still be alive and come forward and say: Yes, Mr. Sitchin, you are right, because I SAW THEM DO IT.

To have such an eyewitness would be tantamount to a miracle.

But, my friends, *the miracle had come about!*

Let me tell you what happened.

Last May — just over three months ago — I received a letter in the mail. The writer, living in Pittsburgh, Pennsylvania, introduced himself as an engineer. I have read your book THE STAIRWAY TO HEAVEN, he wrote, a year ago. But it occurred to him that he should write me only after he had read two long articles about my forgery conclusions, published in the Pittsburgh Press. What you write, he said, is not new to me; the fact of the forgery by Col. Vyse and Mr. Hill has long been known in my family...

Needless to say, when I read this letter, I was flabbergasted. Can it really be — a witness after 150 years? I wrote to him at once. HOW is it known in your family, I asked. As subsequent exchanges, by letter and phone, *with accompanying documents*, have established, this is the story:

The family of my Pittsburgh fan originated in England. When the elders of his family began to go the way of all flesh, he started to sit down with his mother and other surviving relatives, and asked them to tell him of the family's history and roots. In 1954 — thirty years ago — a cousin of his mother who had kept certain family letters, spoke of the man who was first in the family to migrate from England to upstate New York. His name was Humphries Brewer; he was the great-grandfather of the man who had written me.

Humphries Brewer, this long-ago record relates, had gone to Egypt in 1837. He was a quarry-master, a graduate of Berlin University; and he was recruited by the British Medical Service to help build in Cairo an eye hospital. The project was abandoned due to the ineffectiveness of the treatments. So Humphries Brewer joined the team of Howard Vyse at Giza, helping with structural measurements and as an expert on the use of gunpowder.

And, while there — he saw — he WITNESSED — Mr. Hill go into the pyramid with paint and brush, supposedly to touch up markings that he had found there, but actually to paint new ones!

Though it was none of his business, Humphries Brewer objected, and "had words" with Hill and his helper Raven. As a result, he was ordered off the site and prohibited from coming back to the pyramids. All this, Humphries wrote to his father, back in England. Some years later, the Berlin professor Carl Lepsius asked Humphries to accompany him to the Great Pyramid; but Col. Vyse blocked their way.

Now, my friends, everything else in the Humphries Brewer record is *true:* the dates, the discovery of casing stones he had witnessed, the eye hospital project, even the name of the doctor who headed the project. So, I have every reason to believe, is *the eyewitness report of the forgery.*

It is an incredible tale — but it is true. The biblical tales, when they deal with prehistoric times, sound incredible or in conflict with science; but they too are true. And the Sumerian tales — their EARTH CHRONICLES — of the planet Nibiru and its astronauts — are, I am convinced, also true.

Few people have the fortune of having their controversial — perhaps even outrageous — theories meet confirmation so soon. As mine become proven right, I have no one else but the scientists of our time to thank for their supportive discoveries.



Transcription of Zecharia Sitchin's address to the 10th Anniversary World Conference of the Ancient Astronaut Society, Chicago, Illinois, August 7, 1983.

Unidentified Areas of Obfuscation

by Eugenia Macer-Story

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If you should glimpse what you construe as greenish pipe-smoke drifting into your living room without logical cause, hang onto your chair. This may not be localized air pollution. You may be about to disappear.

In the popular paperback *Without a Trace** Charles Berlitz nentions the possibility that ships and planes lost in the Bernuda Triangle may be surrounded by "electromagnetic fog" at the time of disappearance. He bases this opinion on sightings of strange clouds, both in the air and undersea, which involve such unusual phenomena as the malfunctioning of navigational instruments while entering a "greenish-white" haze.

It is romantic to think of cannibal clouds in the famous Triangle. However, this foggy electrical obfuscation may not be confined to geographical "hot spots." Berlitz has also catalogued the strange disappearance of an entire British regiment, which marched into a "breadloaf" shaped cloud in Turkey in 1915. This is not unlike the story of the Pied Piper. Perhaps they were tired of Middle Eastern cuisine and thought they saw a giant English muffin in the sky.

In his text *The Science and Wonders of the Atmosphere*,† Stanley David Gedzelman, a professor of meteorology, displays a "mountain wave" cloud formation which DOES look a lot like a classic disk-shaped UFO, and comments that this type of cloud is often seen near Mt. Rainier — where Kenneth Arnold saw his famous saucers on June 24, 1947. Although the saucers which Arnold reported were of shining metal, it is entirely possible that the aerial disks seen in newsphotos from all over the world ARE perpetrating clouds, but not "mountain wave" clouds. Clouds are visible due to the change in density caused by molecular alteration under change of temperature. The lifference in density between cloud-shapes and the surrounding atmosphere causes refraction of light at the atmospheric interface, and so we literally "see" a change of temperature.‡ Similarly, should the electromagnetic state of an area change significantly, this might cause fogging near the interface due to molecular changes similar to the rapid temp-electric changes which occur during thunderstorms.

Change in the electromagnetic state of an atmospheric or undersea area causes a change in the potential movement of the normally-fluid refracting medium, and this would be perceived visually as a "cloudy" shape. I am not, however, suggesting that UFO disks and odd aerial triangles are naturally-occurring lenticular clouds.

Brian Lynch, UFO contactee,** phoned me as I was getting together the basic ideas for this article, to relate that a friend of his, who had just read an article on *how some UFOs are really lenticular* clouds, ran into Brian accidentally on the street — just as a real lenticular cloud passed overhead. I wonder why — in the gestalt of this moment — they ASSUMED it was a lenticular cloud, and not a UFO. Brian tends to be down-to-earth about his unusual experiences and it is obvious that his synchronistic abilities have nothing to do with meteorology, unless he should decide to become a weather newscaster and astound America by creating the weather he forecasts.

The basic reality of the UFO experience — although it may be involved with the expanded consciousness which caused Brian to phone after a year with an anecdote on clouds just as I was getting together my first and only article specifically on obfuscation — is that ordinary people are experiencing what they construe to be *solid* vehicles, lights and/or weird-looking "alien" beings which maneuver oddly, then disappear.

Desperate to explain these phenomena, psychologists have offered the opinion that people do not actually "see" these oddities but that a mechanism of the brain/mind intersection is activated — as when the brain tissue is stimulated by an electric needle — so that while literally "hallucinating" it may also hold true that consciousness is being manipulated by an energy field or ESP impression of some sort. In this way a camera could be made to "hallucinate" also, using the ESP-electric field to impress an odd image on film.

The extreme of this psychic-manufacture theory is Thomas Bearden's opinion that the collective species-survival mechanism, with possible assistance from extraterrestrial intelligence, has put together collective psychokinesis UFO "mirages" which are solid and functional. Bearden sees these solid UFO mirages as a possible communications device designed to eventually unite humanity. Or is it to disunite humanity? Certainly, there are few concepts with as much divisive potential as the notion that groups of people thinking together can produce solid space-vehicles.

Distinctions tend to blur in the UFO field; there is such a welter of unanalyzed information. I myself have "seen" the linoleum in my hallway ripple and take on sea-form contours, and on another occasion looked into the mirror and glimpsed — not my — but what could well be construed to be the image of Cornelius Agrippa* since I was then wearing a medallion embossed with his sigil. I take these perceptual alterations to be communications from my sub- and/or super-conscious to my mundane awareness.

In the first case, I was reminded of the perceptual effort of *heat* changes in the atmosphere, and the second case reminded me that my necklace was not just pretty but also symbolized real experiences.

In the July/August 1981 issue of *Science Digest*, John E. McCosker describes how experimenters found a white shark, caught near San Francisco, so sensitive to electricity that it simply banged its head against the area of the fish roundabout where there was a slight electrical leak, and — when it was found that the tank could not be fixed by draining the water — finally had to be released into its natural habitat of sea water which was not electromagnetically altered.

Martin Ebon tells in his book *The Devil's Bride*† how both psychiatrists and clergy have used electricity applied to the body or directly to the brain to effect an "exorcism" of the devil,

* Ballantine Books, 1977.

† John Wiley and Sons, 1980.

‡ Concepts of interface are discussed in the specialized essay "On the Possibility of Additional Surfaces" which is available from Raven Press, the author's personal monograph service.

** The Skyo UFO Sighting by E. Macer-Story in *Metascience*, Winter 1980.

* A Renaissance magus.

† The Devil's Bride by Marton Ebon (Harper & Row, 1973) is a study of the psychological and parapsychological aspects of exorcism.

the latter having told exorcists via the mouthpiece of the medium that he/she became uncomfortable at the loud SOUNDS of the electricity within the nervous system of the patient. Similarly, if an area of the atmosphere has been electromagnetically altered, or is naturally different electromagnetically, odd behavior might be observed in the presence of atmospheric fogging. Just as it is odd to jump deliberately into the water and drown or disappear, as may have happened to the crew of deserted ships found in the Bermuda Triangle, it is decidedly odd for an entire regiment to march briskly into a localized area of unusual ground-fog. If I were one of these soldiers, I might at least have broken step slightly as the ranks in front of me vanished, if that is what they seemed to be doing. It is possible that, like the disoriented shark batting against the electrified side of a tank, the men who disappeared THOUGHT they were going down to the other side of an ordinary hill, but in actuality the other side of this hill was not there in 1915. Perhaps they marched down the other side of the hill at some other point in time, emerging as part of the current Arab/Israeli crisis. It is true that in 1980 UFOs were reported by the UPI as hovering over Israeli combat positions. Why on earth would UFOs be reported in conjunction with border conflicts in the Mideast? Thomas Bearden may have the answer. Subsequent to the bombing of an Iraqui nuclear reactor in June 1981, statements were made by the Israelis that the destruction of this manufacturing equipment was being undertaken for the global purpose of ensuring that there would "never be another holocaust."

It is a constant theme in mystical ufology that UFOs may have appeared just subsequent to World War II as a response to the military use of nuclear power. Or perhaps a primal horror and collective thrust for survival have appeared objectively as a response to sophisicated technology which is not popularly understood. Currently making the rounds of the ufology underground is a neat little chain telegram from Paranoia City — recently attributed by an astrologer in Woodstock, N.Y. to Uri Geller's psychiatrist, Andrija Puharich — that neo-Nazi elements personified as the "Darius Foundation" are buying up key geomagnetic areas in order to achieve interdimensional domination of the planet Earth. If this is true, I wish the fascists luck with the Bermuda Triangle. Behavior there does not seem to obey ANY known laws, and it does not seem that ownership of areas such as the area of Canada which contains true magnetic north would automatically lead to world dominion, but stranger things have happened — even on the stock exchange. It is convenient for the Manicheans among us to have as symbolic objectification of our ethical difficulties geomagnetic Nazi land speculators as versus Israeli UFO apparitions, perhaps manned by persons who are mentally bending spoons and keys as they adjust the navigational equipment. This is an allegorical image based on past world trauma.

But what has this tragic philosophical allegory to do with the current relationship of cloud-sightings to UFO phenomena? Logically, nothing at all. It is understandable that people should want to fit unidentified, possibly military, airships into the manageable framework of possible terrestrial conspiracy. However, if there is a terrestrial conspiracy behind these manifestations, it is considerably more sophisticated than overt warfare within international patterns which have already been established by past conflicts. Scientifically, the aspect of these cloudy phenomena which is most interesting and least investigated, is "sonic." The resident "spirits" of patients being exorcised of demons by electricity, as described in Ebon's book, complained of "hearing" the electrical stimulus as "cracks" or "noise."

Frequently, animals will behave oddly both before and after UFO sightings, and it is a bit of folk wisdom that unrest among livestock and/or honeybees foretells a death, the sighting of a ghost, or some other interdimensional experience. Like the white shark, these animals are probably sensitive to electrical changes which affect the nervous system. What do they "hear?" Is it possible that bees, sharks and dogs can "hear" a shift of molecular density? Certainly, sharks, whales and dogs can literally hear sound pitched higher and lower than sound audible to the human ear.

Sound vibrations move at roughly the same speed as molecules. If the density of the conducting medium, such as air or water, were altered — the literal SPEED OF SOUND would vary. For the meteorologists in the audience, this equation is $P = 1/300pV^2$, with p equal to density or mass/volume. Normally V^2 (molecular velocity) equals 300 times 1000 millibars of pressure (P) at sea level divided by 1.2 kilograms per cubic meter (p) atmospheric density of sea level ($V^2 = 300x1000/1.2$). When density is varied, the SPEED OF SOUND varies, as in $V^2 = 300x1000/1$, which obviously gives a different molecular speed as the denominator of p is varied. The addition of electromagnetic energy to an atmospheric area affects and varies molecular behavior, including velocity. This micro-change in velocity, if gravity remains constant, will be reflected in micro-alteration of density, including change of atmospheric temperature. "Cold winds" have often been reported in the presence of mediums "channeling" ESP energies. A rather large or powerful "mechanical medium" might even be able to cause large, unusual atmospheric or submarine clouds to form.

Currently circulating in underground ufology circles, along with the neo-Nazi conspiracy rumor, is the notion that somewhere beneath the seas of the Bermuda Triangle — and possibly also in other undersea locations — there exist abandoned mechanisms from a previous supercivilization which are now generating unruly rays of interdimensional energy. This is difficult for the uninitiated to comprehend. If this has actually happened, why hasn't such apparatus been detected and described in specific detail?

It is far more likely that there is something geomagnetically odd about certain areas which may be conducive to interdimensional UFO fogging and/or the appearance of unusual circular aircraft, than any idea that Atlantean pyramids are still blinking eratically on and off after one hundred thousand years. The elliptical profile of reported and photographed UFO craft strongly suggests that the propulsion system of these vehicles is using a pseudo-sonic resonator system of some sort to actually change molecular density in the AREA of the sighting. If you look carefully within the rectangular, or even triangular, frame of your stereo speakers, you will discover several circular resonators. The most effective diaphragm shape for sound propagation within this continuum is circular. There is probably a connection between the electromagnetic frequencies and molecular vibration, involving a transducer energy as yet unidentified, which causes electricity applied to the nervous system to be "heard" as a crack by mental entities — literal "cracks" or "spirit raps" involving a change in molecular density similar to the cracking of wood in heat or cold to be taken as signals of interdimensional presences. Since the frequency of molecular vibration is the constant, as in the quartz watch by which we measure the passage of "time," it is evident that the energy being sonic-transduced must be in some way a "time" energy

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THE SOCIOLOGY OF HAUNTING INVESTIGATION

by James McClenon, Ph.D.

Virtually, every society since antiquity has considered the possibility that those who die might somehow intrude into the affairs of the living. One category of these alleged visitations has been labeled as "hauntings." The investigation of haunting phenomena falls within the realm of psychical research or parapsychology (a more modern term). Haunting investigations may shed light on the nature of consciousness, the role of the paranormal within our society, and the role of belief systems on anomalous experience. Ironically they have not, as of yet, furnished evidence that "proves" that the human personality survives death. The nature of the scientific orientation and of the haunting phenomena create this paradox.

One aspect of the inability of haunting phenomena to answer the question of life after death springs from the nature of theoretical issues that exist within parapsychology. The "survivalist" position is that the human personality or soul survives death. A survivalist might hypothesize that "entities" which do not have physical bodies contribute to haunting experiences for the living. A modified version of this hypothesis suggests that human personalities "survive" but only in a partial or highly modified form. A body of evidence derived from mediums, brink-of-death visions, apparitions, out-of-body experiences, and reincarnation research supports these orientations, but the issue is framed in such a way that it is not, at present, resolvable through scientific means. The problem is not that this body of evidence does not support belief in the paranormal. Many of those who have gathered this evidence see it as "proving" the existence of paranormal phenomena. The problem lies in the explanatory power of a counter-hypothesis that has been deemed by many to be more scientific.

The alternative theoretical orientation, which has been labeled the "super-ESP" theory attributes haunting experience to vast extra-sensory powers possessed by persons still living. A person may be using his or her own paranormal ability to create the recurrent, localized apparitions and unexplained imitative noises (walking, crying, moaning, whispering, etc.) that are associated with hauntings. This explanation seems to appeal to individuals who are scientifically oriented since it allows the dismissal of a world of spirits, entities, demons, and all manner of philosophically messy constructs. On the other hand, the rejection of the survival-after-death theory on philosophical grounds illustrates the intrusion of ideological factors into the scientific arena. Indeed, it may be that resistance to belief in life after death might be an aspect of a latent scientific ideology devised during early struggles between proponents of science and supporters of religious faith. This resistance may even be an explanation for modern attitudes regarding death. In 1982, George Gallup reported that while 67% of a national sample endorsed a belief in life after death, only 16% of the scientists in his sample did. Belief in survival after death may be deemed "unscientific."

It might be supposed that with the rise of science as a dominant ideology within Western society, the experience of hauntings would have decreased. Although the experience of some anomalous phenomena such as mermaids, werewolves, and unicorns seems to have decreased, haunting experience does not fall in this category. Apparitions and hauntings are apparently a perennial feature of human experience. They have been reported in all societies of which we have detailed records and are far more prevalent than might be expected. For example, in 1890, an "English Census of Hallucinations" conducted with a sample of 17,000 people, found that 9.9% had experienced an apparition. Modern polls have found an equivalent rate of experience. John Palmer, in a study published in 1979, found that 7% of his random sample of residents of Charlottesville, Virginia, felt that they had lived in a house believed to be haunted. The modern haunting experience has been found to have universal features that transcend any particular culture. Charles Emmons found that 4.1% of the individuals contacted in a random telephone survey of Hong Kong Island, conducted in 1980, had experienced a ghost. A large segment of the American society has experienced alleged intrusions of the dead. In a study published in 1976, McCready and Greeley found that 27% of a random sample of Americans reported that, at least once, they had felt as though they "were really in touch with someone who died."

Ironically, the scientific method cannot, at present, resolve the issue as to whether survival after death is reality even though the experience of phenomena that seem applicable is "sociologically" real. Anyone who reports seeing an apparition or hearing the imitative noises associated with a haunting may be creating (or imagining) the phenomena with his or her own mind. This present study will point out that evidence generated through collection of haunting investigations seems to compound the irony. Many (and perhaps most) cases furnish no evidence regarding life after death. Most cases give no details as to what it is that might live since the majority of recurrent localized apparitions seem quite aimless and unintelligent. A discussion of a single case will illustrate the types of information that these cases generate and the conclusions that might be drawn from them. These conclusions are sociological in nature. Although they do not directly pertain to the "life after death" issue, they still may be considered valuable in that they shed light on our attitudes toward death and toward the paranormal.

The Example Case: A Baltimore Haunting

On September 29, 1979, I was informed of an apparent haunting case by the Psychical Research Foundation (presently in Chapel Hill, N.C.). A family in Baltimore reported unexplainable voices, whistling, bed moving up and down, feeling of biting at legs, and the appearance of an orange-yellow ball of light. As a sociology instructor at the University of Maryland, I was familiar with interview techniques and the methods of participant observation. Consequently, I decided to treat this haunting case as merely another form of human behavior, one which should be subject to sociological analysis. These cases are such that it is rare that evidence can be generated that can establish the paranormal quality of any particular case since the investigator must depend, to a large degree, on human testimony.

On September 30, 1979, I interviewed each of the family members and was overwhelmed with description after description of ostensibly paranormal experience. The family consisted of 9 individuals and three generations. The married owners were 62 and 63 years old; their two unmarried sons were 36 and 27; two divorced daughters were 33 and 30; each daughter had a son (ages 9 and 7). The wife's retired sister (age 72) also lived with the family.

Experience of the phenomena was not distributed randomly. One son (age 36) and the two daughters reported the most experiences. The two grandsons reported no experiences.

The family reported that they moved into the house on April 29, 1979, and began hearing unusual noises (knocking sounds) almost immediately. About a month later, one daughter had a strange nightmare which awakened her. She awoke seeing a bright yellow ball of light on the wall; she felt horrified, yet could not move. This began a series of nightmares involving images of herself in demeaning situations associated with unusual and distorted individuals. Although unaware of her sister's experience, the other daughter, and also the wife, had separate experiences of seeing a large orange ball of light on the wall.

Numerous experiences occurred during an evening in which three family members stayed up all night in the room where the phenomena seemed to be centered. One daughter made a vigorous but unsuccessful attempt to photograph the strange lights. The lights seemed stimulated by her efforts .The lights took the form of "an orange ball" which was "the size of a tennis ball" and of "an orange zig-zag snake-like light on the floor." Later, a tugging occurred on one woman's sleeping bag and even later, some unexplained thing touched the leg of the second woman. None of the visual or sensory experiences were verified by two people at the same time although auditory raps were perceived by all.

The disturbances began occurring on almost a daily basis, sometimes taking the form of a feeling on the face or ankles (a numbness, itching, tingling or burning sensation). The disturbances also manifested unexplained knocks, voices, whistling, music, and the sound of percussion instruments.

The phenomena seemed to be perceived in different ways by different people. Some saw apparitions, some merely saw lights, some were "paralyzed" in a peculiar fashion. On one occasion, a daughter (age 30) was observed to turn slightly orange when this paralyzation occurred. At the same time, the air surrounding her took on a "strange misty quality."

The male owner of the house (Mr. M.) decided to investigate by spending the night in the bed which seemed to be the center of many alleged paranormal events. He made a particular effort to maintain a normal state of consciousness and planned to signal his older son should anything abnormal happen. During the night, he felt a "funny feeling," as of someone pushing under his feet. Then he heard a knocking noise. He became paralyzed and was unable to signal his son who was resting on the floor. This happened again a short time later while the son was watching. The entire side of the mattress under Mr. M.'s feet (and his feet also) was raised up about 8-12 inches as if to throw him out of bed. Bed vibrations and bed-shaking became a part of the haunting experiences that various family members reported.

Ministers of various religions attempted to alleviate the disturbances but were successful in only causing temporary abatements. No one was certain as to what was causing the disturbances. The only consistency that seemed to exist in the apparitions or in the nightmare dreams were that they involved people in "old-time" clothing, i.e., "like back in the 1800s."

On October 5, 1979, I spent the night in the room where much activity had occurred. Although a few minor knocks were heard, no major incidents were experienced by myself or the other individuals during the early evening except the "itching and burning" feeling on the face. I fell asleep at around 3:30 a.m. I assumed that the suggestive atmosphere was a probable cause for the unusual feelings I had on my face all evening.

At around 6:30 a.m., I awoke and observed an elliptical red light on the wall by a window. This light lasted approximately 30 seconds and may have been caused normally (although the shade was drawn). As the light faded, someone in the room began moaning as if having a nightmare. The sound of a knock came from the wall beside me. I woke the people in the room and inquired if they had witnessed the events I had observed. One son (age 36) stated that he was having a dream in which he was crawling over the floor towards my bed because "it" wanted me out of the bed. In his dream, "it" felt I had to wake up, to get up. The others heard the rap but were not in a position to see the light. Later, I attempted to duplicate the light that I had witnessed through normal means but could not devise an "easy" explanation since the shade was quite heavy.

We all went back to sleep. At about 7:30 a.m., I was awakened again when the bed I was sleeping on started vibrating. It seemed equivalent to a minor earthquake yet I observed no earthquake-type of effects occurring in the rest of the room (no lamps or pictures swayed). This experience lasted for perhaps half a minute. Fraud could not be precluded as a possible explanation for these experiences.

I have visited this house on numerous later occasions yet have not observed any further phenomena. The family members have described various apparitions, and unexplained lights, bed-shaking, and sounds. The frequency of experience does not seem to be following any pattern although experiences may be more frequent during the summer months. Experiences are not distributed normally among family members. Some have had many experiences while others have had only a few.

Belief in the authenticity of the phenomena does not seem to be required for an experience to occur. One son (age 27) harbored a high degree of skepticism yet was later "paralyzed" while he observed an apparition of a woman in his room. Frequently haunting cases "stump" the resident skeptic who had previously mocked those who had reported experiences.

It should be apparent from this brief description of the case that little evidence has been generated concerning its authenticity, much less whether a bodiless "entity" or "entities" are producing the phenomena rather than a living person. What becomes apparent, through investigation of a large number of cases, is that various patterns of behavior tend to be associated with these types of experiences. These patterns reflect not only the form that the haunting experience takes but the culture within which the haunting occurs.

Frequently, the individual who experiences a haunting is stigmatized as deviant. The Baltimore family found that if they described their experiences to "outsiders" they were frequently considered strange. The popular media has presented a distorted image of the paranormal which increases the stigma of its experience. The family, themselves, were fearful that they were going collectively insane and part of my investigation was an analysis of that possibility. It is my observation that all the family members seem to be sensible, honest people. I have formed this opinion through interacting with them for over three years.

Frequently, individuals who experience hauntings feel troubl-

ed, terrified, and helpless. No formal agency is available to help alleviate this difficulty and doctors, psychiatrists, counselors, police, and social workers frequently contribute to the stigma suffered by an individual who claims an experience. The head of the Baltimore family and his wife attributed the phenomena to demons and, consequently, felt stigmatized by the fact that their own prayers were unsuccessful in alleviating the problem. Like the experience of UFOs, it might be assumed that the experience of hauntings is under-reported due to the stigma associated with it.

People sometimes contact the Psychical Research Foundation hoping to alleviate their haunting stigma. The Baltimore family hoped that I might have information regarding the nature of their experiences. Unfortunately, parapsychology is not an advanced enough science to supply very complete information regarding hauntings. Little consensus exists within the field regarding means of alleviating hauntings which are considered to be negative. Although parapsychologists such as Dr. Gertrude Schmeidler have successfully demonstrated in a quantitative manner that paranormal aspects surround some haunting cases, this tells little about controlling the experience.

Scientific investigation has led to the classification of various forms of paranormal experience. A general tendency exists for recurrent cases to fall into two broad categories, hauntings and poltergeists, although the two frequently overlap. Hauntings are generally associated with a structure or location and typically involve apparitions and imitative noises. Poltergeists are said to center about a living agent and are characterized by knocking noises, furniture moving or toppling over, and levitation or teleportation of objects. The living agent is frequently a young adolescent although cases exist where there is no living agent. It has also been hypothesized that family tension contributes to these phenomena.

This hypothesis has led to the tendency of poltergeist investigators to seek to find an unusual level of tension within the family situation. Such a finding leads to the feeling that the case has been scientifically "solved" since this tension may explain the poltergeist phenomena.

At times, it is difficult to distinguish hauntings from poltergeists, and even the ability to classify a particular case contributes little to attempts to control the phenomena. The Baltimore family has witnessed the physical movement of objects. Does this mean that they suffer the effects of a poltergeist? If so, no central agent is apparent. Parapsychological literature suggests that a reduction in family tension is advisable, but tension is not particularly apparent in the Baltimore case. During the first years of my investigation, conditions in the house were somewhat crowded, but not particularly tense. It has been a year since one of the married daughters moved out, taking her son, yet the haunting continues.

One pattern which is common in haunting cases is the attempt to "normalize" or "humanize" the paranormal. The Baltimore family has attempted to adjust to what had originally seemed unbearable, horrifying, and weird. They attempted to sell their house but were unsuccessful due to high interest rates. The present strategy on the part of some of the family has been to accept the life-after-death hypothesis and to attempt to interact with the "ghost" or "entities." This attempt seems to have little effect on the experience of the phenomena. Those who have experienced the phenomena the most have attempted to attribute a human personality to it. Although no pattern has emerged regarding the identity of the apparitions which have been observed (it is uncertain that the same one has ever been seen twice), one family member had attributed meaning to her dreams which give her experiences a human but malevolent form. Another has nicknamed the lights that he has seen as "Billy, the ghost."

Family members have attempted to determine the history of the structure that they live in and of the land upon which it sits. No history of violence or other factor that might result in a haunting has been uncovered. Mediums and fortune tellers have been consulted on various occasions with the hope of discovering the identity of the haunting agent. Unfortunately, no two messages obtained through these means have agreed. Nonscientific individuals, who accept the survival-after-death hypothesis frequently assume that such messages are accurate when, in fact, they often contribute little to the resolution of a case.

Attempts to exorcise the phenomena have also failed. This is not uncommon with these types of cases. Dr. William Roll, of the Psychical Research Foundation, has collected 116 poltergeist cases out of which exorcism and related activities were tried in 30. The phenomena ceased in 4 cases, temporarily ended in 4 cases and intensified in 5 cases. In the remaining cases, the efforts had no effect. In general, Roll found that exorcism was ineffective in dealing with these types of cases.

It might be noted that although haunting cases infrequently generate evidence that supports the survival-after-death hypothesis, the experience of them generates belief in that orientation. Most of the Baltimore family members had not considered this question to any degree previous to their experience of the haunting. During my investigation, they all came to believe in life after death even though they were open-minded in regard to the super-ESP theory. This pattern regarding influence of belief is prevalent within much of psychical research. Although scientific studies seem incapable of reaching consensus, individual experiencers frequently form firm opinions regarding not only the authenticity of paranormal events, but the "transcending" nature of these events. For the experiencer, the experience transcends any interpretation that science might attribute to it.

Individuals who observe haunting phenomena frequently react with fear. This is probably a result of the association of the experience with death. It is rare (though not unknown) that individuals are physically harmed by the experience of a haunting. In the Baltimore case, one woman became extremely terrified when she observed a tea bag fly out of a tea cup in an inexplicable manner. Taken at face value, such an incident should not be intrinsically terrifying. It would be nonthreatening except for the attribution of paranormality and its assumed relation to death (and demons). It would seem that paranormal events have the role of supporting religious assumptions and therefore tend to trigger both fear and belief in life after death. On the other hand, investigation of haunting cases might contribute to understanding the means by which observing these events come to be perceived as fearful and the role that this experience plays in triggering belief in life after death.

In conclusion, it should be noted that haunting cases are unable, in general, to supply complete or firm evidence regarding life after death. This irony is a result of a latent ideology within science that has encouraged the development of a counter-hypothesis that can explain any haunting phenomena without belief in survival after death. On the other hand, investigation of haunting cases might contribute to understanding the means by which observing these events come to be perceived as fearful and the role that this experience plays in triggering belief in life after death.

Understanding attitudes toward death should be granted a higher priority in our society. Such an understanding could con-

GHOSTS in CAVES?

by Gene Gardner

It was a crisp, clear night, not unlike any other Missouri night in early December, when the darkness makes the stars stand out big and bright. The sweet sound of a hound barking on-trail echoed through the hollow. The woods were illuminated only by the bobbing headlights of two raccoon hunters hurriedly making their way over a brushy ridgetop.

"Hear that? I think old Brownie barked on tree," one man said.

The dog's owner replied, "I don't know. He sounded funny to me. Let's get down there quick and see what he's cornered."

The two finally arrived at the entrance of a large cave. Brownie stood there, peering into the dark passageway, walking nervously from side to side, growling and barking.

"Look at the hairs on his back — standing straight up!"

"Maybe he knows something we don't. He looks scared to go into the cave."

"There hasn't been a raccoon born that old Brownie wouldn't tackle. He was born a fighter," the dog's owner said. "But if he's scared to go into that cave, there's something bigger and meaner than a coon in there. You can bet your boots if old Brownie isn't going in there, neither am I!"

"Get your dog and let's get out of here. I've heard stories about big cats in these hills, and caves are spooky places anyway."

I have been to more than 600 Missouri caves since 1978, met a lot of people in my travels and have always enjoyed visiting with them. It seems as though just about everyone has a story that relates to caves in some way. A lot of them are about hunting and dogs.

Dogs, especially good hunting dogs, have remarkably keen senses. If a proven dog cowers in fear, then there might be good reason for man, too, to be afraid.

I've heard several versions of the story. Sometimes, dogs go into the cave — undoubtedly after some stern persuasion from their owners — and return whimpering, tails tucked between their legs.



Bones of a sabre-toothed cat on left are much smaller than the bones of a Panthera leo atrox, both resident in Missouri centuries ago.

I guess old Brownie could have trailed a big cat into the cave. And he might well have had second thoughts about cornering a hundred-odd pounds of sharp claws, teeth and muscle in such a dark, tight place. It's easy to blame the dog's fear, but maybe we could stretch our imagination just a little further than the old storyteller did. If we were the least bit superstitious, we could say that maybe old Brownie could sense the ghost of a really big cat, one that died in the cave thousands of years ago.

Several large cats and catlike carnivores roamed Missouri about 12,000 years ago. During a special study trip to a cave in the south-central part of the state, we discovered a track left by one of them. Jerry Vineyard, assistant state geologist, spotted the first track, but James Vandike and Bill Palmer, both of the Missouri Department of Natural Resources, and I soon found several more.

One perfect track was more than seven inches across from toe to toe and about one and one-half inches deep. At first we thought it might have been made by a sabre-toothed cat (incorrectly called a sabre-toothed tiger). James Vandike's investigations proved that an even bigger cat could have made the tracks. He obtained the reconstructed skeletal foot of a sabre-toothed cat (*Smilodon*) and one of a larger species of true cat (*Panthera leo atrox*). If the name *leo* rings a bell, it's because this panther-like cat is an extinct subspecies of the modern-day lion. Only this cat was bigger than the African lion.

The bones of *Panthera's* foot measured more than 29 cm (11½ inches) from toe to heel. The four toe bones matched the toe prints in the plaster cast of the cat track we made in the cave. The foot of the sabre-toothed cat was obviously smaller and did not match up with the plaster cast.

The tracks we found are the second such ancient tracks discovered in Missouri (the others also in a cave), but by far are the largest. The discovery of these footprints stirred the excitement and curiosity of paleontologists throughout the nation.

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tribute not only to the science of anomalous experience, but to the wisdom required for living in our modern age. Haunting experience hints that a reality exists which exceeds the physical reality accepted by science. Sociologically, haunting investigation reveals the assumptions inherent within the latent ideology of science, an ideology that seeks to deny certain systems of belief. Although "unproven" by science, survival after death remains a distinct possibility and acknowledging haunting experiences as a legitimate, sane form of human perception increases the probability of that possibility.

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These unique tracks may very well remain one of nature's unsolved mysteries.

I can vividly recall one experience during a nighttime visit to a cave near Pomme de Terre Lake. We were quietly crawling along on our hands and knees through a narrow part of the cave. Bats fluttered nervously by our heads, frightened by our lights, which were growing ever dimmer.

"Was that you making that sound?" my assistant asked. I had made eerie sounds in caves before, as a joke.

"No," I said. Then I heard it, too — a low, slow growl coming from up ahead around the corner.

My better judgment, like old Brownie's, took over, and I said to my assistant, "Let's get out of here." She was already one step ahead of me — which is hard to do in a small crawlway passage.

We stopped at the entrance to catch our breath and look for animal signs. The bark of a large tree just outside the cave was scratched up. Some animal apparently was using the tree as a shortcut to the steep, rocky hillside above it.

I have heard growls and other frightening sounds in a few more caves since then. Sometimes it's so quiet in a cave that you can hear your own heart pounding. I have often sat there in the total darkness, fantasizing about other animals that once may have passed by the same spot.

There are a lot of "cave ghosts" that could be far scarier than any modern cat could ever hope to be. If you were hunting in the Missouri Ozarks around 1850, your dogs could have chased a black bear into a cave. Bears commonly used caves as dens, and their "beds" still can be seen in the mud of a lot of Missouri caves. If we could go back even further in time, say 10,000 to 20,000 years ago to the Pleistocene epoch, we could see giant short-faced bears. These were huge bears, as big or bigger than grizzlies, and once were abundant in Missouri. We found the remains of one of these giant cave bears in Round Spring Cavern in Shannon County. Their remains have also been found in Pulaski and Camden counties.

Now, if one of those big bears weren't enough to turn the tail of any dog, then how about a wolf? Even larger than timber wolves, which can weigh up to 170 pounds, dire wolves roamed the Missouri Ozarks only 500 to 13,000 years ago. Their remains have been found in caves in several Missouri counties.

Where there are carnivores, there must also be prey. One ancient animal that served as prey was the flat-faced peccary. These piglike creatures roamed the Missouri Ozarks in small herds at about the same time as dire wolves, giant cave bears and big cats. The well-preserved remains of two peccaries were discovered in a Department of Conservation cave, just to name



Claw marks on a cave wall in eastern Missouri are probably from a black bear, a much smaller species than the giant cave bear.

one site. They were forest dwellers but liked an arid climate, which sheds some light on what the Missouri landscape and climate must have been in the past.

The fossilized remains of a lot of ice-age animals have been preserved in Missouri caves. Some caves can be thought of as massive graveyards, where the remains of dead animals are piled layer after layer. Such places are important and worthy of protection. Camels, ground sloths and even alligators once roamed the Missouri Ozarks. How would we have known about them if their remains had not been preserved in caves, like a natural museum?

I can remember standing in that south-central Missouri cave, silently staring at the giant cat prints in the mud floor. The yellowish flame from my carbide lamp flickered, casting ghostly shadows which danced upon the cave wall. It seemed strange to think that only time separated me from being face to face with a big, ferocious cat. I swallowed the lump in my dry throat and shrugged off the possibility that the low, muffled sound I just heard could have been a growl. After all, there are no such things as ghosts in caves . . . are there?

New Evidence of 'Ape-Men' in China

China's Wild Man Research Association has reported new evidence of ape-like creatures similar to Bigfoot and the Abominable Snowman.

In a report concluding 35 months of field research, Liu Minzhuang, association chairman and member of the Chinese Anthropological Society, said he has hair samples and 1,000 footprint specimens from the creatures.

The Yangcheng Evening News said Liu presented the report at a recent meeting of the Science and Technology Institute of Guangxi province, a hilly region where the "ape men" have been reported.

Since 1976, Liu and a "Wild Man Investigation Corps" have made five trips to Hubei, Sichuan and Hunan provinces and other places the wild men are believed to live.

"In his report, he presents evidence that other members of the corps have seen with their own eyes, such as footprints of the wild man, habitats, hair and other material evidence," the newspaper said. "Also included are bits of the wild man's glossy golden hair and photos of footprints."

Liu said most of the 1,000 specimens of footprints of the Chinese "ape men" were 16.5 inches long and 31 of them were 19 inches long.

Three members of a team hunting for the creatures last year said they spotted one in the Shennongjia Mountains of Hubei province

They said it was tall, erect and covered with reddish brown fur, a description that conforms with other reported sightings.

An earlier report by other Chinese scientists said the footprints indicate that the creature, full grown, is more than eight feet tall and weighs about 550 pounds

The footprints reportedly are human in general form, and the hairs found are similar to those of the great apes but have certain human characteristics.

SOURCE: UPI in *Schenectady* (N.Y.) *Gazette*, 11/29/83.

CREDIT: R. Girard.

Geological Evidences of NOAH'S FLOOD

by Evan Hansen

EDITORS' NOTE: The first part of this article appeared in the previous issue, Pursuit No. 63, Third Quarter 1983, pp. 98-105. The following second and concluding part develops additional evidence of catastrophic flooding and moves on to assign the cause. Gravity and the Earth's rotation, suboceanic rifts, earthquakes, continental drift, and polar shift are all considered. Central to the author's theory, however, is the incredible volume of the water itself; amassed by weeks of rainfall at a rate of about one foot per hour, accumulated over an exemplary area of less than 150 square miles, it rose within the constriction of canyon walls and finally found release as a force capable of moving rocks "the size of a compact car" over distances of five to six miles.

PART II

When flows are greater than this, the evidence is too vast to see from the surface, let alone to photograph. For instance, Highway 89 drains two valleys with a watershed area of almost 2000 square miles. Just north of the Big Rock Candy Mountain, this canyon makes an S-turn. The water was so deep here that it flowed right over the top of a mountain that rises to a height of more than 1000 feet.

When we consider such huge places as the Colorado River drainage area, the magnitude of erosion escapes comprehension. The Grand Canyon is five miles wide and a mile deep, but as big as that is, it still couldn't carry all the water. The overflow crossed what is now the Navaho Indian Reservation to a width of more than 100 miles. In the Painted Desert, erosion left hundreds of volcano stems that stand out like the trunks of dead trees; the lava plugs inside the cinder cones were too hard to erode away, but the cones and supporting earth below them were all removed. Everyone who has seen a Western movie has seen this site. Its mesas and pinnacles form such spectacular backgrounds that even stories supposed to be "tall Texas tales" are still shot in Monument Valley. Yet more incredible is the general absence of curiosity about what formed those mesas and pinnacles!

There is only once force in nature that has the ability to cut these formations. In geology it is called a "braided flow" of water, and this is the way it works:

When water crosses essentially level terrain, it spreads out too far to cut a single channel but still flows to low ground. High ground remains uncovered, as "islands." As the water cuts deeper, these islands have their sides cut away but not their tops, which remain above water. The low ground is cut deeper and wider, making the islands even smaller. When the water stops flowing, each island stands out as a mesa if it has remained fairly large, or as a pinnacle if it is only a small remainder. Anyone willing to do a little field-work in a heavy rain (3 inches or greater) will see the process in miniature, especially in places where water falls from high ground to low, as at a road-crossing.

Satellite films show that the Mississippi River has cut a channel more than 100 miles wide. It may have been even wider for a brief time; the photos show a series of north-south lines between the river and the Rockies. Interpreting the lines will take on-site study which may answer the obvious question, If these are not water lines, what are they? Are they markers of the melt from the polar ice cap which had to flow out the Mississippi, putting a great deal more water in it than came from other areas affected only by rain?

The melt from ice caps had to cross Nebraska, and this was the making of the Nebraska Sandhills. These are, in fact, ripple marks. Everyone who has seen ripple marks left by ordinary flooding will recognize the pattern. Inspection of satellite photos of Nebraska will remove all doubt that unbelievable flows of water crossed the state. Marks made by ripples in excess of five miles between crests are too big to be seen except in the satellite photos that also show "kettle holes," hollowed out by the burial of huge blocks of ice which later melt.

After more than a century of dispute, most authorities now agree that catastrophic flooding formed the Scablands of Washington state. When NASA analyzed the first LANDSAT shots in 1972 there was no longer doubt that flooding had occurred. The clincher was the dark-colored basalt covered by soil of lighter color. When the erosion had stripped away the soil, the color contrast was too sharp to deny. Hundreds of other locations could provide acceptable evidence of flooding were it not for the absence of color contrast; when deep layers are the same color as the surface, the camera has nothing to offer in evidence.

Even after strong suspicions of catastrophic flooding began to mount, efforts were made to assign a non-catastrophic cause. Eventually accepted was the idea that a huge lake in Montana — Lake Missoula — was created when glacier ice formed a dam on the only outlet; a sudden breakup of the ice allowed the entire lake to drain across the Idaho panhandle and spread across Washington state in a matter of days.*

Lake Missoula held 500 cubic miles of water, but not all of it was available for immediate release. Since there were two parts to the lake and 75% of its water was held in the part above a constriction called Eddy Narrows, only 120 cubic miles was available for immediate release. The rest would drain at a slower rate, as determined by the capacity of Eddy Narrows. The area of Washington state covered by the flood was roughly 100 miles wide and a little more than 150 miles long. At the south end, Wallula Gap drained into the Columbia River, but before a single drop could reach the river, the whole area had to be under water. If 120 cubic miles of water could spread at once and equally over that area, the depth would still be only a little more than 40 feet. If the same volume had spread gradually, as a lake being drained, part would be past the outlet by the time the last of it left the lake, the depth remaining considerably below 40 feet. But the shorelines indicate depths *in excess of 400 feet*. Moreover, Wallula Gap was too small to carry the volume of water; it was discharging a cubic mile of water in about 70

*Special #144 by Victor R. Baker, "Paleohydrology and Sedimentation of Lake Missoula Flooding in Eastern Washington," published by Dept. of Geological Sciences, University of Texas, Austin, Tex.

minutes but it still constricted the flow so that 260 cubic miles was held back.

How could a hydraulic dam hold back 260 cubic miles of water when only 120 cubic miles was available for immediate release and had to cross more than 150 miles before reaching the dam? Even if the entire volume of 500 cubic miles could spread at once and equally over the whole Scablands area, the depth would be under 200 feet — less than half the depth that actually existed. It seems clear that the amount of water which hit the Scablands must have been something like ten times the amount held in Lake Missoula. Furthermore, satellite photos show that only a small part of the water crossed Idaho. An ice cap shielded the north edge of the Scablands from erosion, and the water came directly off the ice with no river to carry it away. Probably 90% of the water was melt from the ice cap; less likely, it might have been a surge of ocean water.

It seems more than coincidental that floods hit the Scablands at the same time Lake Agassiz flooded the Dakota region and Lake Bonneville drained. If ever a serious attempt is made to date these floods, I expect the dates to be at the end of the Pleistocene and all the dates to match. Similar marks of flooding are apparent in preliminary inspection of satellite photos of the Middle East and North Africa; when these are analyzed and the floods are dated, I believe they will also match.

We find other clues hereabouts that have no such obvious origin, but they must be mentioned even though pure speculation is all we have to aid our search for their cause. Throughout Utah and Nevada the terraces on the east side of valleys are clearly marked; on the west they are either absent or, if present, are minor stand-lines. The conventional explanation is "prevailing winds from the southwest." But in the Bonneville basin the lines below 4800 feet are wave-cut terraces which formed as the lake evaporated. These are equally clear on both east and west. The absent ones are the deposition terraces of 5140 feet and above.

An obvious example is at the point of the mountain at the south end of Salt Lake Valley. Fig. 10 shows the clear terrace on the east. The 5140-foot level is several hundred yards across. At the base, the 4800-foot line is seen, with erosion cutting the exposed face between the two elevations. The Fig. 11 photo was taken at the same spot looking west, where there is no terrace at all. The left side of the photo shows a stand-line at the 5140-foot level where the "narrows" constricted the water as it passed from the south. But the right side of the photo shows the valley widespread again, and not even the stand-line can be seen. Since both sides held the same lake, why a large terrace on the east and almost nothing on the west?

My guess is that a surge of water from the northwest deposited sediment over the terrace. I found a valley in Nevada where the terrace did show on the west, but only below a tall peak; low mountains on either side had allowed water to cross and it buried the terrace. Other evidence, such as gravel beds west of a road, and bare rocks on the east, suggests a surge of water from the northwest. But such clues are still unclear. All we know at present is that unequal terracing does exist and must be explained before we can understand what actually took place.

The Cause of Noah's Flood

The biblical account of Noah's Flood has promoted much misunderstanding. As written in the Book of Genesis, the story describes a flood only a few yards deep instead of more than *three miles* deep. Physical evidence in North America, specifically in the Lake Bonneville basin of Utah, tells of a flood of the magnitude of approximately one foot per hour of rainfall. It raised the Bonneville level some 150 feet above the overflow point.

In the Middle East, the Tigris-Euphrates valley is notably wider than the valleys of Utah. When the watershed of both

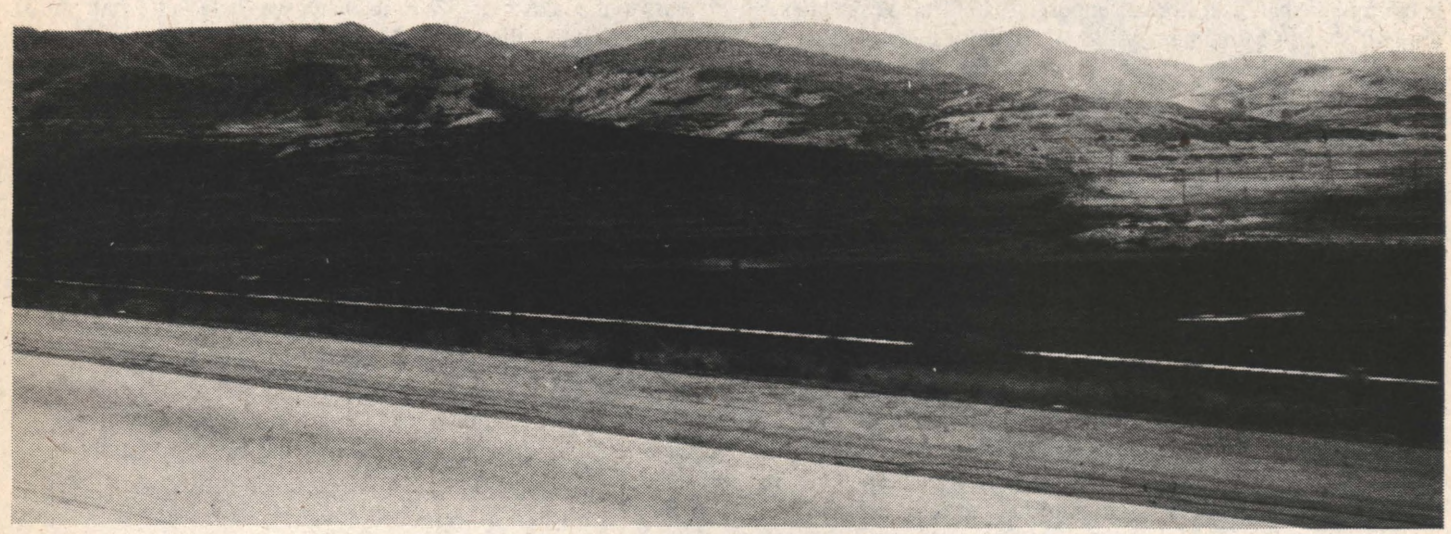


Fig. 10

regions is related to the size of the valleys, it becomes clear that the 15-cubit depth stated in the Bible was probably caused by a rainfall of almost the same magnitude that flooded Utah. Catastrophic is the only word to describe such an event which certainly would wipe out civilization, and from the geological standpoint it seems well within the realm of possibility.

Further confirmation of the reality of such massive flooding is found in the "flood traditions" that virtually all peoples of the world have perpetuated. For example, the Navaho Indians say they escaped by climbing the San Francisco Peak near Flagstaff, Arizona, and the Flood ended when the Grand Canyon drained away the water. Satellite photos show that this peak did remain above water, and thus we are able to authenticate evidence from another bit of history encased in legend. That so many variations have developed around the central theme of the Noah story confirms that they are similar histories. If all or most Flood traditions described survival on a boat during a 40-day rainy period, they would be dismissible as copycat teachings, but the many versions of the Flood story suggest that survival happened world-wide and was achieved by each group in its own way.

Consider also the survival of animals in Africa, Australia and the Americas; in no way should this be attributed to their voyage on the Ark. Even if Noah had collected a multitude of beasts and had kept them safe until the time of their release, how could they then cross oceans and deserts? How did the kangaroo reach Australia or the elephant reach Africa? Why are the Asian elephants a different species than the African? Why the sudden extinction of American elephants? Any explanation must take such questions into account.

I believe a logical theory is beginning to emerge from long study of the observable facts. While it is expected that further research will modify the following explanation, the basic concept will surely be confirmed.

Among the observable facts most useful in building any Flood theory are those adduced from physical clues by Alfred Wegener, a German scientist who worked them into a theory of "continental drift" which he proposed around the turn of the century. His continuing study of the movement of continents led him to publish four revisions of his theory, the last of which appeared in 1928, shortly before his death.*

Wegener based his theory on the fact that South America and Africa "fit together" like two pieces of a jigsaw puzzle. This observation was nothing new; people had been aware of the intercontinental "fit" since the first maps of America began to stir European minds. But Wegener was the first to carry the idea forward until a full theory became established.

Considering the limited amount of information that was available to Wegener in the early decades of this century, his accomplishment was truly astonishing. In many respects, his 1928 revision is still the most complete discussion of continental drift yet published. Although findings in the last half-century have done much to improve Wegener's hypothesis, anyone who wishes to add to his or her knowledge of continental drift would do well to read Wegener's last revision as background.

Wegener's theory would likely have been accepted in his lifetime except for one mistake; it was more of an oversight than a mistake, but it prevented acceptance until deep-sea core drilling in the 1960s proved that continental drift is real.

In simplified terms, drift theory holds that the Earth has a solid crust of silicate-aluminum rock which floats on a core of silicate-magnesium rock. The sial rock is lighter than the sima, which is why it forms the crust (a process similar to the formation of a floating crust of ice on a body of water). However, the core of sima rock is plastic and holds enough heat to keep

*Alfred Wegener, *The Origin of Continents and Oceans*, tr. from German by John Biram, Dover Publications, New York.

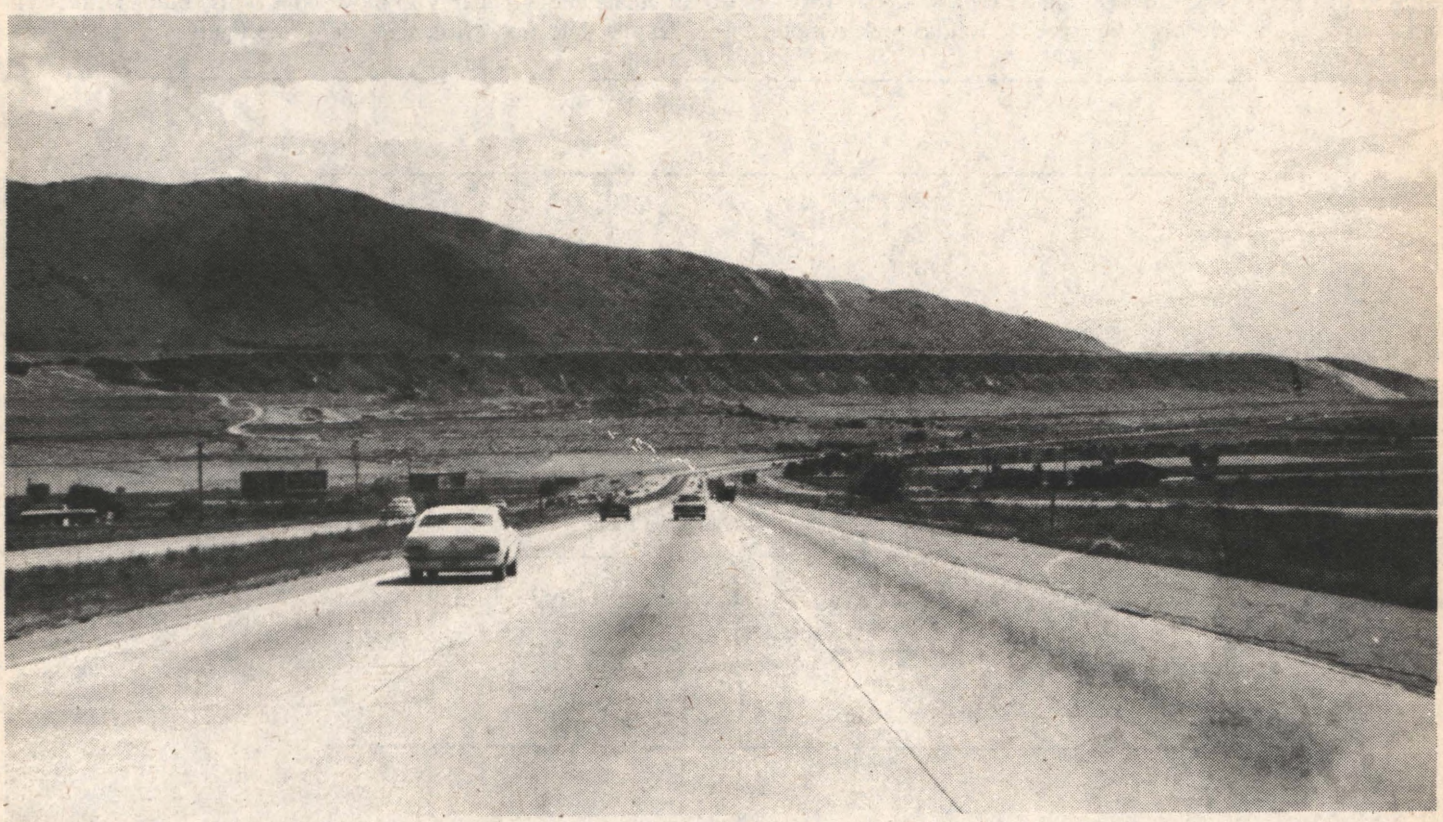


Fig. 11

it near the melting point; melting would take place except for the great pressure that maintains a near-solid viscosity. The core does deform under stress, but very slowly.

The sial crust is relatively thin, averaging about 35 miles deep, with more thickness under mountains and less under plains. When the crust fractures enough for molten rock to intrude into the crack, the rock hardens and prevents the crack from closing. Further stress will make the crack larger rather than break a new crack, since materials tend to rupture at their weakest point. If the stress continues, the crack keeps growing. Given enough time, the crust is forced apart until water enters, forming a new "ocean" between the blocks. Then one or both blocks ride over the sea-floor on the opposite side, pushing up mountains in the process.

The Atlantic Ocean is said to be the result of this ever-spreading fracture. Wegener collected a formidable body of evidence to support his theory which attracted about equal amounts of support and criticism, the latter mostly from authority types who seem always reluctant to consider new ideas. Then came the "Glomar Challenger" and the deep-sea drilling of the 1960s. The core samples brought aboard the research vessel removed all doubt that the sea-floor was sima rock, not sial rock.

A rift that runs from pole to pole lies almost in the exact center of the Atlantic Ocean and forms a series of offset blocks, the east side matching the west side. The rocks are datable by two methods. One method compares the decay of radioactive material to stable elements, the ratio determining the age. The second method of dating is by magnetic reversal: If molten rock containing iron cools in a magnetic field, the trapped iron will be aligned with the field. By magnifying the principle to global proportions, scientists were able to determine that the Earth's magnetic poles had reversed repeatedly throughout our planetary history.

In the ocean, both magnetic reversal and radioactive dating showed that rocks east of the rift matched those to the west — not "almost" or "closely" but so exactly that rock samples taken five miles east of the rift were found to have the same age and magnetic orientation as rock samples taken five miles west of the rift. Similarly, rock taken six miles east of the rift had a different magnetic reversal and a greater age than that taken five miles from the rift — but exactly the same magnetic reversal and age as rock taken six miles west of the rift. The test was repeated again and again, all over the oceans. In every case the result was the same: a rift in the center of the ocean had rocks at equal distances to both sides which matched; the farther from the rift, the older the rocks.

Wegener's theory would have been more readily accepted if he had been able to add to his concept a mechanism capable of providing enough energy to move a continent. The inertia of a mass of continental size and the friction of sliding against an ocean floor posed such a vast energy requirement that most geologists remained set in their belief that drift was "impossible." Wegener made an effort to meet the objection. He described the energy source as a "flight from the poles." In his view, two forces were at work. One was the distortion of gravity by the bulge of the equator. (The Earth is of greater diameter at the equator than at the poles, so he reasoned that the increased mass would pull toward the equator.) The second force, rotation of the Earth at a rate of almost 1000 mph at the equator, enhances the first, and the two forces act together to produce enough energy to move continents. This all sounded quite logical and attempts were made to measure the forces and their effect. Unfortunately for Wegener's theory, the efforts failed to find evidence of an "equatorward pull," either by gravity or centrifugal force.

When my own study had taken me to this point, it became clear that finding the source of energy was essential to further progress in understanding continental movement. The more I thought about it, the more firmly I became convinced that Wegener was basically correct. The rotation of the Earth *had* to create enough energy to move continents. Perhaps, then, it was the detection effort that should be faulted.

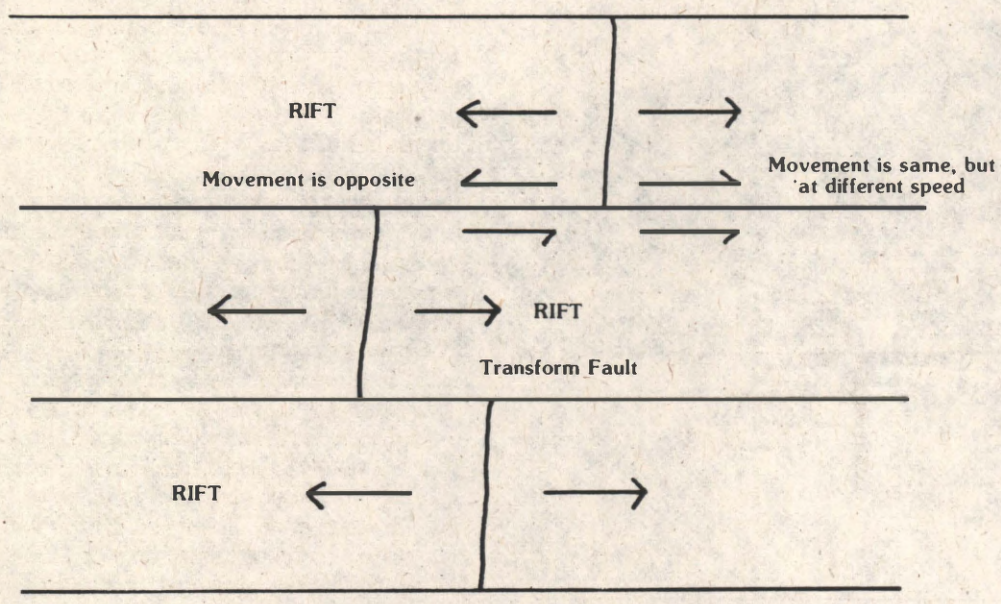


Fig. 12

Deep-sea measurements had disclosed the rift pattern sketched in Fig. 12. Rifting was greatest at the equator and gradually diminished toward the pole. The variation of rifting had broken the crust into blocks, each one moving independently of the rest.

Virtually every geological formation can be traced to rifting as its source. Each block has a center in which the two sides move away from each other. This creates a boundary at the next block where the two sides of the fracture move laterally past each other. The result is called a "transform fault." Depending on the relationship to the block next to it, a transform fault can move both sides in the same direction at a different speed, or the two sides can move in opposite directions. If there is continental rock overlaying the system, it will show at the surface in a variety of tensional and compressional forms that create all the structures known to geology.

In order to fully understand the behavior of the rift system, the use of a globe is recommended. A verbal description simply cannot convey the same understanding that can be gained by holding a globe in one's hands and tracing out the rift pattern on a global basis. Anyone can sketch a selection of features that are important, but no plane surface or flat projection can correctly show the structure of a sphere. Only by holding a globe at the hypothetical pole and rotating it can one comprehend the rift system.

Continuing my study, I noticed that the rift was more active at the equator than near the poles. Clearly, Wegener had to be correct in identifying centrifugal force as the energy source; only centrifugal force would diminish with distance from the equator. The other force that required further consideration was gravity. Both forces manifest themselves on the Earth and between Earth and the Sun and Moon. Somehow it had to be an interaction of these forces that moved continents, but how was I to conduct an experiment to measure the interaction?

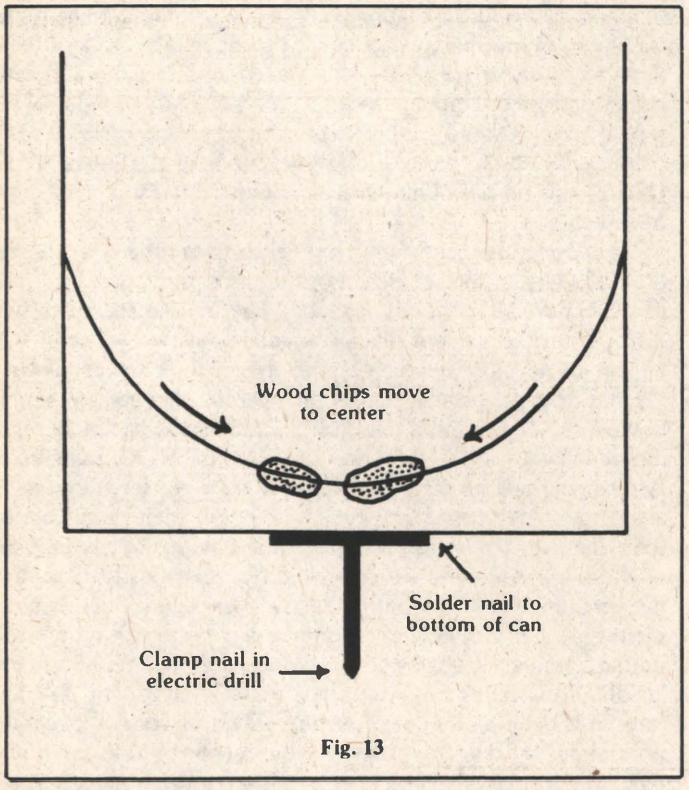


Fig. 13

After much thought, I devised the following experiment, illustrated in Fig. 13: Take a large, clean can, solder a big-headed roofing nail to the bottom in the exact center and clamp it in the chuck of a variable-speed electric drill. Keeping the assembly upright, add water to the can and turn on the drill to lowest speed — just enough to make the water climb up the sides by centrifugal force. Then note what happens when two common materials are placed in the water: A pinch of sand flows immediately to the edge; it is heavier than water and so responds to centrifugal force. Wood chips, however, move to the center.

The simplest oversight that obviated Wegener's energy hypothesis began to dawn on me. Einstein based his theory of relativity on the observation of the equality of gravitational mass and inertial mass. In plain language, this means that anything that floats by force of gravity will have a negative response to centrifugal force, which is simply a function of inertial mass. Wood is lighter than water, so it floats. Wood also has a negative response to centrifugal force to the exact degree it floats; thus it moves to the center. Continental rock, being lighter than the rock of the core, also floats. In respect to the centrifugal force of the Earth's rotation, the crust weighs almost zero, so it must move *toward* the poles, not away from them as Wegener thought. Moreover, if a floating object is pushed below its natural level, the forces increase; if it held above the level of equilibrium so that it is no longer floating, then the normal pull is felt. Another experiment is more definitive but more difficult to do correctly:

Fill a large container, such as a bathtub, with water and let it stand until it becomes stable. Protect it from external influences such as vibration and stray air-currents. Then place a floating object* in the center. If it is left undisturbed you will note that it moves to the north edge of the tub.

Experiments like these are invaluable to our understanding of the interacting forces. They show that the centrifugal force of the rotating Earth does create a bulge at the equator, but the increase of gravity is less than the downhill slope. An object moving from equator to pole will drop about 35 miles nearer to the center of the Earth. It's the same thing as going downhill anywhere. Wegener correctly identified the source of energy able to move continents, but he misperceived the *direction* of the movement.

Once again taking globe in hand and tracing the pattern of the Atlantic rift network, we can see evidence that North America did indeed move northward as it moved away from Europe. But Africa and South America straddle the equator, so they are pulled in both directions and therefore cannot move poleward. North of the equator, each of the two southern continents has a bulge on the west while their larger interior areas lie south of the equator. One effect is that both southern continents are twisting clockwise, the west moving north at the same time the east is moving south. Island chains off the coast of South America show the line of the twist. In Africa, the twist is narrowing the western end of the Mediterranean at Gibraltar while on the east it is stretching and thinning the Aegean sea-floor. Long ago, Arabia split away from Africa and the Red Sea formed. Compression in the west at the same time tension occurs in the east provides evidence of a clockwise rotation in response to poleward drift; the inland rift under eastern Africa is a further acknowledgment of clockwise rotation.

The two forces need also to be considered as they apply to the Sun and Moon. Everyone knows that tides are created by the gravity and centrifugal force of the Sun and Moon reacting on the Earth. The same tidal forces also affect the crust of the

*Avoid using foam plastic or anything else of small mass; even the slightest puff of air will deflect it. Best results are obtained with something that barely floats, such as a metal bottle-cap.

Earth, but to a lesser extent because of the resistance of the rock. From personal experience I know that tidal forces do move the crust. I worked in a coal mine for three years. It was a small mine, overtime was encouraged, and we could work early or late if we wanted to "fill the bin" and thereby earn a day off. During all three years, I was underground "around the clock" at one time or another. I found that rock movements occurred at 12-hour intervals, corresponding to the position of the Sun and Moon. If the rock over my head was moving in response to tidal forces, the entire crust must respond in similar fashion.

We all know that the Moon orbits the Earth, but the Earth also orbits the Moon to a lesser degree. The pull of gravity toward the Sun and Moon on the near side is exactly equaled by the pull of centrifugal force on the opposite side. A double stretching of the Earth's crust occurs halfway between. But the Earth itself is rotating, so the "pull" is really a lift-and-relax sequence, repeated every twelve hours. Inevitably, the constant flexing fractures the rock of the Earth's crust.

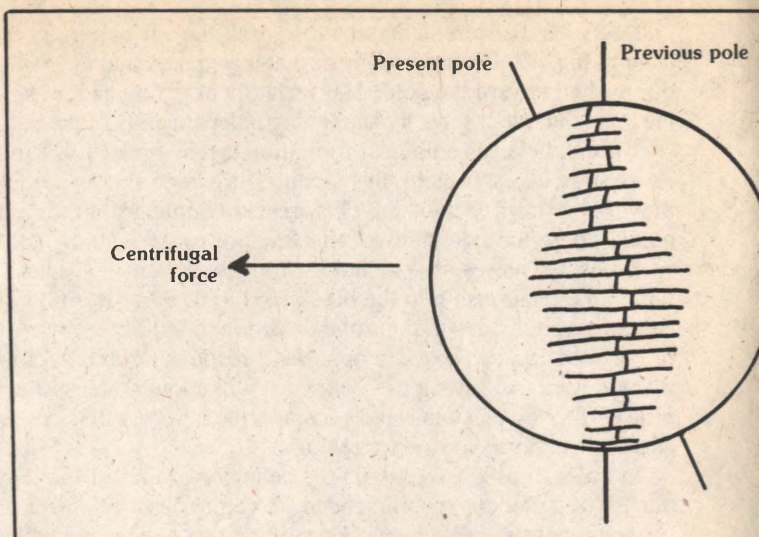
In addition to tidal flexing, the Earth's rotation generates centrifugal force. Since ths force is maximal at the equator, the rifting at the equator is greater than at the poles. This "two-way stretch," between tidal pull of gravity and centrifugal-force pull in the opposite direction, is illustrated in Fig. 14.

Even if the forces lift the Earth's crust only a few inches, the 12-hour cycle of flexing will cause the crust to fracture. As soon as a fracture widens sufficiently, molten rock enters; the rock then cools and forms a wedge which prevents the crack from closing except at the ends. Since rock fractures along lines of least resistance, the ends, being now weakened by the intervention of the wedge, will bear the full force of the next flexure; thus new cracks are formed, filled in, then extended in ceaseless repetition. Though the effect of a single 12-hour flexure may be too small to detect, the cumulative spread will amount to several inches in less than a year's time; over eons, it forms oceans.

For every inch the ocean spreads, the contintents are moved apart an inch. America is moving westward more than Eurasia and Africa are moving eastward. Part of the explanation lies in the smaller mass of our continent. More influential, however, is the westward pull of the Earth's rotation. As America was pushed over the Pacific sea-floor, the friction raised up mountains in the west: the Andes in South America, and the Rockies, Sierras and Cascades in North America. The weights and pressures involved are beyond comprehension, yet the continents do not simply move an inch every time the rift opens an inch. When movement is blocked, the energy accumulates until it becomes powerful enough to overcome the blockage. If the blockage is small and brief, earthquakes of energy sufficient to break it may be long delayed. The longer the stress builds before breaking, the more severe the quakes will be — and the greater will be the distance the continent moves in a single "slip."

Now imagine what would happen if the blockage of a certain fault line were suddenly released, to allow a slip of several miles. Certainly, one result would be a new pole of rotation; the greater the movment, the greater the polar displacement. If the movement and displacement were enough to cause the polar ice cap to melt at its present location and a new cap to freeze at a different location, the climate and the weather would be affected in drastic and dramatic ways. Granting that it could happen, the obvious next question is, Has it ever *happened*? The physical evidence says yes, and it underlies my belief that the resulting weather-catastrophe was the biblical Flood.

The "Ice Ages," when Europe and North America were covered by ice, are familiar to everyone who has ever studied,



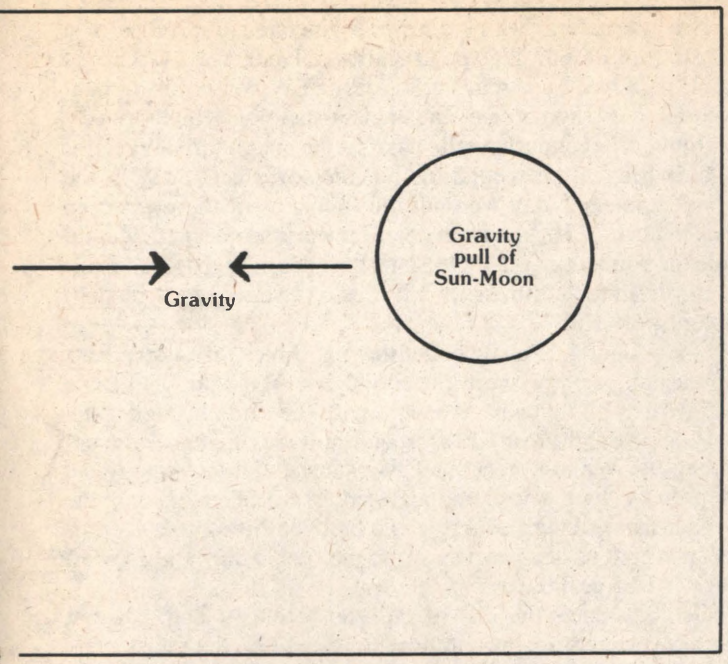
Rifting of Earth's crust by stretching between gravity and centrifugal force

Fig

or idled through, a survey article or book on geographical history. (My reference map of the ice cap is printed in the *Encyclopedia Brittanica* under the heading "Pleistocene Epoch.") The outline show a normal polar cap, not "a whole world under ice" as some misinformed artists have envisioned it. The outline covers England and northern Europe, but by the time it reaches mid-Russia, the boundary is much farther north than at present.

The European ice boundary is one segment of a rough circle that girds the globe at a latitude of about 60°, and the boundary of the American ice cap appears as another segment of the same circle. From the Great Lakes northwest across Canada a line of glacial lakes follows a broad curve at about the same latitude, 60°. West of this line was an ice-free corridor. The Rocky Mountains were under ice as far south as Utah and Colorado only because of great altitude; without the mountains, no glacial ice would likely extend southward beyond the line of lakes. If a compass is set so as to follow the curve of the lakes across Canada, the radii will intersect at a point off the southeast coast of Greenland.

This done, the next step in our rollback of time is to transfer the boundary of the Ice Age from the flat projection of a map to the spherical surface of a globe. The outline so drawn will differ from the present glacial boundary in two ways: it will appear to be more extensive, and it will look lopsided when viewed from the present north-pole position. No need to worry, however. Keep in mind that glaciers are as much a function of altitude as they are of latitude. The famous Mt. Kilimanjaro in Africa is almost on the equator, but it has a glacier. Remember also that an ice cap over ocean water will melt more rapidly than one over land — a principle made obvious by comparison of the huge Antarctic ice cap which covers mostly land, and the smaller Arctic cap that is mostly over ocean. Some adjustment may fairly be made to compensate for the altitude-effect on the boundary transferred from map to globe. What remains is still a lopsided form — until you realize that it's the pole and not the ice cap that's out of whack. Then, if you "move" the pole either by mark or mind's-eye to center within the boundary, the ice-cap shape is restored. Even more interesting: the location of the pole is off the southeast coast of Greenland, at or close to the intersection of radii projected from the Canadian "arc of lakes" as above described.



If there was a polar shift, we should find similar evidence in the southern hemisphere, and we do. Australia and New Zealand show glacial phases identical to those in the northern hemisphere. Unfortunately, continental drift and polar shift have not appealed to investigators south of the equator as subjects worthy of extensive study. One report, by archeologist Richard S. MacNeish, is exceptional. Published in Scientific American magazine for April 1971 under the title "Early Man in the Andes," MacNeish's paper was based on his efforts to date some very early human remains in the Ayacucho Valley of Peru. He discovered evidence of glaciation in patterns significantly like those in the northern hemisphere. By correlating artifacts in each glacial phase, he hoped to construct a valid time-frame. Much to his surprise, he found a total reversal of phase: when the north was cold, Ayacucho was warm, and vice versa. He confessed his bewilderment:

> If the Ayacucho evidence holds true for Andean glacial activity in general, the South American glacial advances and retreats do not coincide with those of the Wisconsin glaciation in North America. This apparent lack of correlation presents interesting problems. If glaciation is caused by worldwide climatic changes, why are the South American oscillations so unlike the North American ones? If, on the other hand, widespread climatic changes are not the cause of glaciation, what is?

Good question! How about polar shift? The Wisconsin glaciation had four phases with three warm intervals. There is evidence of sudden change between warm and cold. If the cause was a huge slip of a fault line, the change of weight distribution of the Earth's crust could be expected to move the poles very rapidly. Would this then explain why Australian phases match those of the north while Andean phases are total reversals? Yes, emphatically so.

Assume that the north pole was southeast of Greenland; put one finger on a globe at that location and another finger where a matching south pole would be located. Your second finger spots the south pole at a point half-way between Antarctica and the eastern shore of Australia. While this accounts for a south-to-north match, it places the Ayacucho region too close to the equator for glaciers to form. If, however, the pole is moved to the other side of Antarctica, Ayacucho will be close enough to the pole for glaciers to form but both Australia and North America/Europe will be warm. Thus polar shift offers a reasonable explanation for the phase-reversal.

Figure 14 shows how a rift formed in line with the axis of rotation places the present pole out-of-line with the rift network under the oceans. But when the *revised* polar location is compared to the rifts, all do line up. The Atlantic rift fits the revised pole position perfectly. The Pacific rift also fits this polar location except between Australia and Antarctica, where the separation occurred at a much earlier time. Even the rift that split Baja California away from Mexico comes into line with the revised polar position.

What other polar positions are suggestible from this evidence? If the Ayacucho glaciation resulted from proximity to a south pole position between Antarctica and South America, the matching north pole would have to be northwest of Alaska in the region of the Lyakhov Islands. Do rift patterns under the ocean fit such a polar position? Yes. In the North Pacific, between Hawaii and the U.S. coast is a series of fracture zones — the Mendecino, Murray, Molokai Clarion, and a half-dozen smaller ones — that line up with such a polar position. The Ninety East Ridge, an undersea ridge south of the Bay of Bengal, also lines up, as does the Atlantic rift which is on a direct line with the south Greenland pole. There are many older polar positions worth studying, but the further back in time we go, the more obscure the evidence becomes.

Again refer to the globe and note what happens when the line of the European ice cap is extended westward to the mid-Atlantic rift and the line of the American ice cap is extended eastward: The American line comes about 600 miles south of the European line. But, if this were a true polar ice cap, the lines should meet — *unless the Earth moved 600 miles.*

Now lay a mark along the center of mass for America, pointing poleward. Do the same for Eurasia and bring the two marks northward to the point of intersection, just north of Greenland where they meet head-on. This is the location of a huge lateral slip called the Nansen Fracture Zone (Fig. 15). Eastward, it extends almost to Europe; westward, it runs in a virtually straight line, crosses land at approximately the Canada-Alaska border, and continues along the Aleutian Islands. The Atlantic rift passes east of Greenland until it reaches, and is cut off by, the Nansen Fracture Zone. But 600 miles to the west, the rift continues northward, and from another point 600 miles further westward another extension also treks northward. Such is the "stage" on which the Nansen Fracture Zone enacts the role of a transform fault with severe left-lateral movement. The only way the play becomes intelligible is to visualize the original rift as once extending past the Nansen Zone in a straight line; after much spreading in the usual manner, the northward thrust of the continents met at the Nansen Zone and the rift slipped back 600 miles. When the rift crossed the zone and again opened in the usual manner, the northward movement of the continents pushed it back another distance of 600 miles. (To get an idea of the distances involved, locate Spitzbergen on a map or globe and realize that the tiny archipelago was once the northern tip of Greenland!)

If the Atlantic rift passes the Nansen Zone, the location of the former pole is shown to be north of the farthest extension of the rifts, for according to the energy-source theory, a rift cannot extend past a pole. Thus we come back to the Lyakhov Island region where the pole would have to be if the Ayacucho Valley glaciation resulted from polar shift. If the last 600-mile slip is

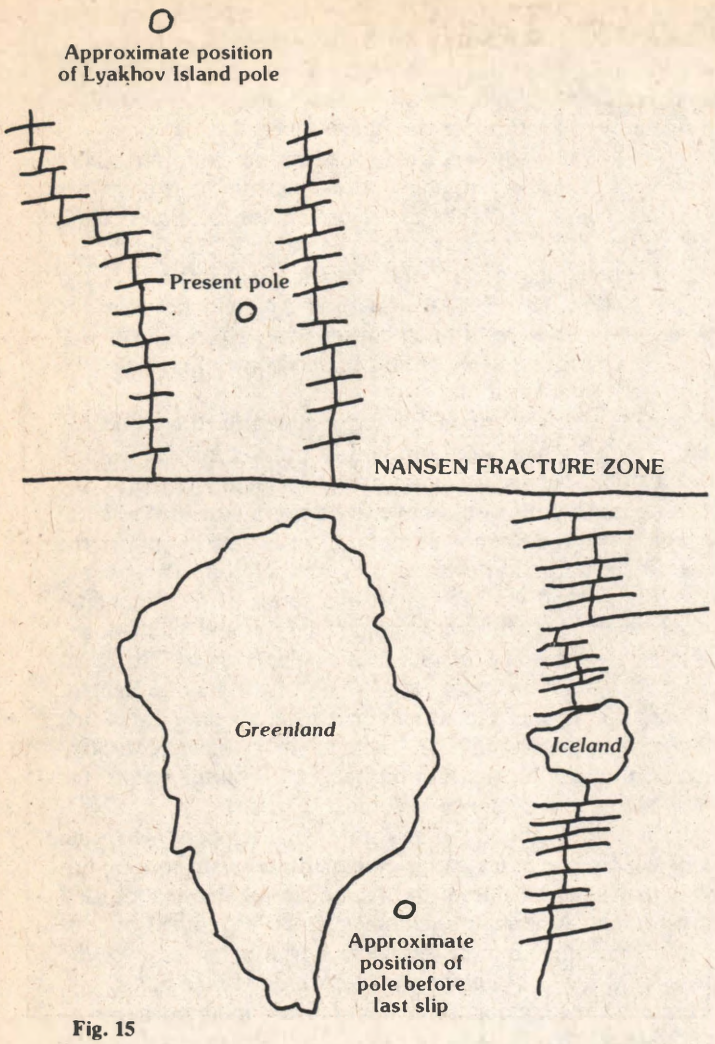


Fig. 15

moved back until the rifts match on both sides of the Nansen Fracture Zone, the boundary line of the ice caps of America and Europe meet at a point in mid-ocean. Adding all this together provides a substantial body of evidence that the Nansen Zone fractured in historic times, relocated the pole, and caused the catastrophic weather-disturbance known as Noah's Flood.

It seems questionable that a slippage of 600 miles would occur as a single event. More likely would be a series of smaller slips, cumulatively sufficient to redistribute the weight of the crust and move the pole of rotation to its present position. In a few violent displacements or in many smaller ones, the 600 miles eventually accumulated. It happened in historic times at the end of the Pleistocene Epoch.

Is there a way to test a geophysical theory that cannot be validated by repeating the experiment? Yes. One good way is to consider the other, possibly related natural mysteries it might help to solve.

If this Flood theory is valid, the full force of the catastrophe would devastate the northern hemisphere; Australia, Africa and South America would also be affected but less than half as severely. Does this explain why fewer extinctions of animals occurred there than in the north? The African fauna are still genuine Pleistocene forms, as are those in South America; Australian fauna date to a still-earlier period.

But even in North America, extinction was far from total. Many hundreds of species, including humans, managed to survive and pass on their story to us in a variety of ways.

Are the natural forms I have enumerated true relics of a Pleistocene Flood? Was polar shift involved? The evidence is scant, piecemeal, and much of it is legendary. What mix of tradition, allegory, symbolism and ancient sociology "authorized" the biblical account that tells us: "In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up..."? If "the great deep" means the ocean, could not "all the fountains" as understandably describe a *tsunami* rolling in from the north, sent on its destructive way by a sudden, violent pole shift?

As for dating, it is my belief that the Bible story lost at least a thousand years between the Flood and Abraham. The Bible was written by humans — people with the same strengths and weaknesses and most of the social attitudes that still prevail among us. Without benefit of the science and technology we so proudly hail, those biblical writers reached beyond the megadistance of their own past and brought forth some magnificent perceptions of an ancient world they could only guess about, since it had no literacy.

Geology dates the end of the Pleistocene Epoch at about 10,000 years before present time. In the Bible, the Pleistocene is said to have ended about 4500 years ago. As ancient times are reckoned, the discrepancy is unimportant; moreover, it allows the possibility that a great catastrophe may have been followed by a similar though less drastic event. I have found physical evidence that seems to show two periods of intense flooding with a calm period between.

* * *

This study is still in the research stage. In its future the only certainty is that some aspects of the theory will be modified to take account of clues yet to be discovered and evidence still to be compiled. However, the basic concept I believe will endure; summarized, it postulates that:

* Continental drift is caused by the interaction of gradual sea-floor spreading of rifts created by the gravity of the Sun and Moon stretching against the centrifugal force on the opposite side; the slow spread of these rifts is stored in the Earth's crust as elastic stress.

* The continents move poleward under the centrifugal force of the Earth's rotation; movement of continents is slow, small, and infrequent, due to friction.

* When fault movement is blocked, the forces accumulate great strength; when they are released the Nansen Fracture Zone moves effectively to relocate the poles; the ice cap melts; drastic changes of climate and weather ensue; very rapid pole shift causes sudden catastrophe.

* A pole shift of major proportions occurred in historic times, at the end of the Pleistocene Epoch; it wiped out civilization but not the human race and not all of the world's fauna.

* The Bible story is important evidence of Noah's Flood; the traditions of many ethnic groups support it; probability is strong that such groups have the same event in their heritage; as in the case of disaster survivors today, each witness knows only what happened to him or to her in whatever were the immediate surroundings at the time of the occurrence.

* Geological evidence gathered locally shows that floodwater rose at roughly the rate of one foot per hour; similar proof of catastrophic flooding probably exists in many areas of the world; here in Utah it is available for all to see.

Stoned on Annie Taylor

by Dwight Whalen

When Mrs. Annie Edson Taylor, a dancing teacher of 63, packed herself into a wooden barrel to waltz over Niagara Falls, October 24, 1901, everyone feared one thing: rocks. Impact on the big rocks below the Horseshoe Falls would shatter her keg like an eggshell. By the greatest luck, she plunged into unobstructed water and was quickly rescued.

Notoriety assured, Annie expected to reap a fortune telling her tale to captivated listeners across America. But while her body had not been dashed upon the rocks, her hopes of money-making were. The pot of gold she saw at the end of Niagara's rainbow was anything but a stone's-throw away.

Stones. In researching this remarkable woman's story for a book I'm writing (to be called "The Lady Who Conquered Niagara"), I find myself repeatedly, unexpectedly, stumbling over *stones.* Or should I say, bombarded by them! I can't seem to dodge discovering strange stories of stones falling from the heavens, falling in ways as wildly unlikely, frightening, and dangerous — in one case, fatally so — as Annie's own fall. Reading an old microfilmed newspaper, rooting out information on "The Queen of The Mist," as she dubbed herself, I seem to inevitably find a Fortean gem like the following report from the *Buffalo Express,* October 27, 1901:

WHO THREW STONES?

Mysterious Fusillade Scares People In Ohio Town

Missiles Came From Where No One Knows, Seemingly From a Clear Sky

Pomeroy, Ohio, Oct. 26 — The little village of Harrisonville, eight miles from this city, is terribly wrought up over the mysterious stoning of houses and people there in broad daylight. It began on Sunday afternoon, October 13th, when a small bowlder came crashing through the window of Zach Dye's house, a half mile out of town. The family were all at home, and at once ran out to see who had thrown the stone, but no one could be found, notwithstanding the house stands in the open and several hundred yards from any object large enough for a man to hide behind. While the family members stood about in the yard in open-mouthed wonder, other stones pelted the house, coming from where no one knows.

On Monday afternoon, at about the same hour, a shower of stones fell right in the heart of the little village. The first intimation the citizens had of it was when a piece of rock came through the plate-glass door of a store. When the proprietor and the customers ran outside to see who had thrown it, there was no one in sight. An alarm was given and the citizens came out with their guns, and, notwithstanding the stones continued to fall about them, they were unable to tell whence they came. One man, William Alkire, was hit a glancing blow on the arm, but was not seriously injured, while James Clay, a one-legged man who was standing in front of his house shouting to the excited populace that it was probably nothing more than a lot of mischievous boys, had his crutch knocked from under him and broken by a large bowlder, which struck it about midway.

On the third day, when the stones began to fly through the air, the entire population thronged the streets. They were lined up and counted, to see who it could be that was throwing the stones. Every man and boy in the village was found to be in the line, and still the dangerous missiles flew through the air.

After her business manager absconded with her barrel in January 1902, Annie spent time in the Auburn, N.Y., area plotting to get it back. I found this item in the *Auburn Daily Advertiser* of March 20, 1902:

STRUCK BY A METEOR

Near Indianapolis, Ind. — Thomas Sloane had a close call when a meteor about as large as his fist struck in the opening of his right overcoat pocket, passed through it, burned his leg in a painful manner and then entered the earth to such a depth that his neighbors are still digging for it.

Annie's manager sold her barrel to a Chicago theatrical company for use as a promotional gimmick for a play called "Over Niagara Falls." On August 15, 1902, a police raid snatched the cask from a department-store window. Scanning the *Chicago Tribune* for this period, I came across:

MAN KILLED BY A METEOR

San Antonio, Tex., Aug. 17 — (Special) — A sheep herder named Ramon Cruz was killed in Edwards County by a fragment of a meteor that was shattered by coming into conflict with a huge bowlder on which he was seated last Friday. Details as to the exact time and the circumstances are now known. A piece of meteoric stone weighing an ounce was imbedded in his skull. Near the body was found a piece of the meteor weighing five pounds, and seven small fragments.

The odds against anyone being struck by a meteorite are — duck! — astronomical. The odds against it occurring to two people in the United States within a six-month period are ultra-astronomical. But perhaps the strangest part, coincidentally, is that Annie Taylor's life is linked to the locales where these murderous meteorites fell.

The first struck "near Indianapolis, Indiana." In an autobiographical sketch which she published in 1902, called "Over the Falls," Annie claimed to have lived for a time in Indianapolis, and "taught dancing in Lafayette," a town near Indianapolis.

Edwards County, Texas, where Ramon Cruz was struck in the head and killed by a meteorite, is not far northwest of San Antonio. According to her own account, Annie served as an associate high school principal in San Antonio from 1878 to 1881. In fact, one of the reasons she gave for barreling over Niagara concerned San Antonio. She owned a small ranch there, she said, and hoped to earn enough money lecturing about her Falls ride to update the property and make it her permanent home.

One time near San Antonio, she barely missed catching a fatal "meteorite" in the head herself. "A gang of Jesse James' men," Annie related, waylaid a stagecoach she was riding between San Antonio and Austin. When she refused the bandits' demand for money, one of them pressed a pistol to her head. "Blow away," she told him, "I would as soon be without brains as without money!" He let her keep both.

In the matter of strange stone showers, Annie Taylor was

once in the immediate proximity of one. Charles Fort, in his book *LO!*, describes "three showers of hot stones" which fell near the building of the Charleston *News and Courier,* September 4, 1886, four days after the devastating Charleston, South Carolina, earthquake (*The Complete Books of Charles Fort,* p. 563). Referring to details published in the *Richmond Whig,* Fort says the paper was informed "that the stones, which were flint pebbles, ranging from the size of a grape to the size of a hen's egg, had fallen upon an area of 75 square feet, and that about a gallon of them had been picked up."

On the night of the earthquake, August 31, who should be one of those rocked in their chairs at Charleston but Annie Taylor. She said she was sitting in the parlor of a friend's home listening to a music recital when the cataclysm struck. She reacted with stony composure and scientific interest. "Her first thought was as to the effect an earthquake has on the temperature," said the *Buffalo Express* in 1901. "She got up and looked at a thermometer, noted the state of the mercury, and later observed that within an hour the temperature had fallen 26 degrees."

Having retrieved her barrel from Chicago in 1902, Annie hired a new manager and took the barrel on a tour that autumn. She was exhibiting at Trenton, New Jersey, the first week of October. A farm near Trenton, says Fort in *LO!*, was the scene of a stone shower in June 1884 (*The Complete Books of Charles Fort,* p. 561). The *Trenton Evening Times,* October 2, reported:

SHOWERS OF STONES SCARE PEOPLE
IN LITTLE VILLAGE

By Publisher's Press Direct-Wire

Wheeling, W. Va., Oct. 2 — The suburban village of Parkview, four miles east of this city, is the scene of great excitement over fifteen showers of stones.

During the last two days showers have been frequent and some damage has been done to property. A house was badly damaged. The stones are the size and shape of cobblestones.

The larger that have fallen are jet black and very hard, while a number of snowy white ones have also fallen. The white coating has the appearance of lime.

Many of the people from here have visited the village and have brought some of the stones to the city.

I cannot find a personal connection between Annie and Wheeling, West Virginia, nor the site of the earlier stone showers, Harrisonville, Ohio. However, the same October 2 edition of the *Trenton Evening Times* reported the following from a town 20 miles north of the New Jersey capital.

BELIEVE IT RAINED FISH
AT BLOOMSBURG

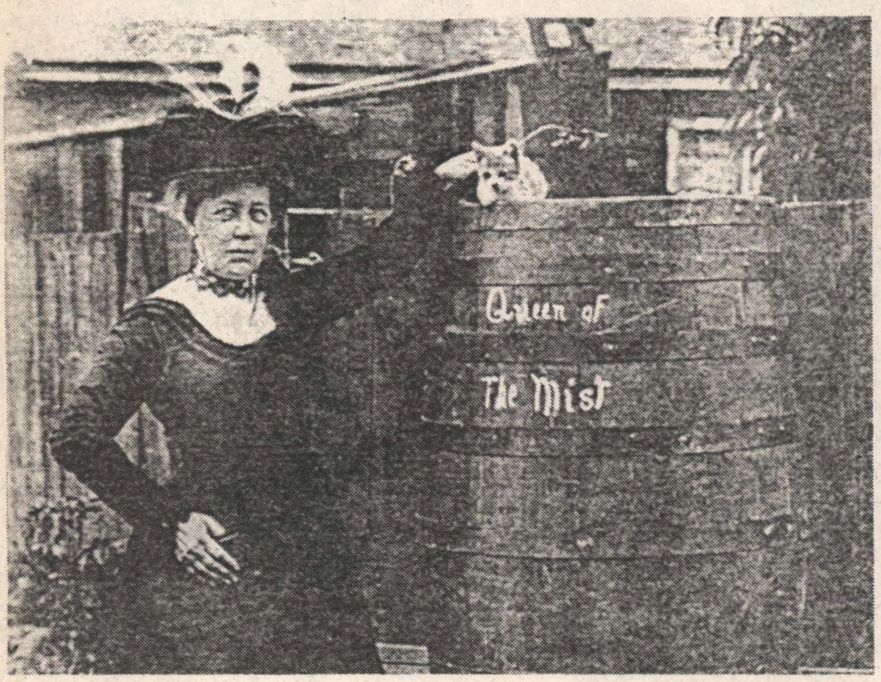
Flemington, Oct. 2 — After the heavy shower Sunday afternoon many small fish were discovered in the streets. As no stream of water could have overflowed its banks and reached the place, it remains a mystery how the fish came to be there. Many, however, have accepted the theory that they came down with the rain.

It is interesting that a probable fishfall took place that close to Trenton when Annie was there, and interesting that I should discover it. I have documented numerous instances of rainfalls of fish in the Niagara Falls area ("Niagara Fishfalls," *Pursuit,* No. 62, Second Quarter 1983).

Getting back to the stonefalls, the wounding meteorite near Indianapolis struck while Annie was feeling the wounds of betrayal. The meteorite that killed a sheep-herder near San Antonio struck on the very day Annie made "the kill" of recapturing her barrel in Chicago. The Harrisonville stone-showers began on October 13, 1901, the same day Annie arrived at Niagara to begin preparations for her barrel-ride. The 15 stone-showers outside Wheeling occurred during Annie's exhibition at Trenton — where again her barrel was stolen by an unscrupulous manager, this time for good.

* * *

Abruptly the stones stopped falling. I have searched two decades of Niagara newspapers, gathering bits of data on Annie's twilight years, without finding a report of a killer meteorite or an inexplicable stone shower. It is surprising and remarkable that these phenomena occurred, not only so relatively frequently during a 12-month period in the U.S., but at times of significance to Annie, as if laying cosmic emphasis on the struggle she waged to win fortune with her oaken keg.



AFTER-THE-GRAVE STONES

Annie Edson Taylor died, stone-blind and stone-broke, in the Niagara County poorhouse, Lockport, New York April 29, 1921.

Annie's name returned to the headlines in1980 when the Bay Area Chamber of Commerce, Bay City, Michigan, attempted to have her body disinterred from Oakwood Cemetery in Niagara Falls, N.Y., and reinterred in Bay City, the town where she conceived her Falls-shooting scheme and had her barrel constructed. In a violent May storm that year at Orange, New Jersey, large hailstones fell with tiny iron pebbles inside (*Pursuit* No. 52, Fall 1980, p. 173). Again, Annie's movements can be traced to the locale of a strange stone-shower. Negotiating with the Edison Biography Company to have "moving pictures" made depicting her barrel-ride over Niagara, Annie spent several days in June, 1903, at Orange, N.J.

A Particle-Energy Theory *for the* Kirlian Phantom-Leaf Effect *and* Spontaneous Human Combustion

by Michael Baran

Two bona fide modern mysteries are the phantom-leaf effect of Kirlian photography and the rare, but well-documented, phenomenon referred to as spontaneous human combustion.

Occult metaphysicians have suggested that a bizarre syndrome that sometimes strikes practitioners of the mystic art of Kundalini, the so-called "Kundalini Fire," may represent a rational theoretic model for spontaneous human combustion. Kundalini is based on a postulation that the human entity comprises three dynamically interacting components: the psychic, or mental, force; second, an "electrical-energy" component (both of these being mediated through the central nervous system); and third, the physical body mass. Kundalini is a potentially hazardous undertaking in which a person attempts to psychically channel his "electrical energy" into a specific body area, for example, the cognitive sphere, or the sexual. It is claimed by those versed in Kundalini discipline that if the procedure is not done properly, a real possibility of "circuit overload" exists. In this case, of course, it is more than an electrical fuse that may be "blown;" extremely harmful and even fatal consequences can ensue.

Whether or not the Kundalini Fire scenario represents a mechanistic model for spontaneous human combustion, it does not provide an explanation for the seemingly bizarre results in SHC victims, in terms of particle-energy physics. This article proposes an energy *sub*-particle model that coherently accounts for SHC. The same model also may explain the Kirlian phantom-leaf effect.

Many physicists believe that all atoms constantly emit and re-absorb ultra-tiny sub-particles categorically referred to as *gravitons*. Actually, gravitons are believed to vary somewhat in size, from the relatively larger semi-quantum sub-units called mesons, baryons, and so on, to smaller units like electrons and photons, to the ultimately minuscule sub-unit called the neutrino, a quantum particle believed to be the smallest building-block of the atom. Gravitons all are roughly of a similar size and velocity of motion (quantum velocity). Being in constant motion, gravitons are basically tiny packets of energy. Atoms are structurally composed of aggregate units of varying size. The largest sub-atomic units are the neutrons and protons, which in turn are made up of smaller aggregates called quarks. The minutest building-blocks, the gravitons, are believed to be in a state of constant dynamic emission-and-retention. Gravitonic emissions are thought to be the essential by-product of atomic dynamics.

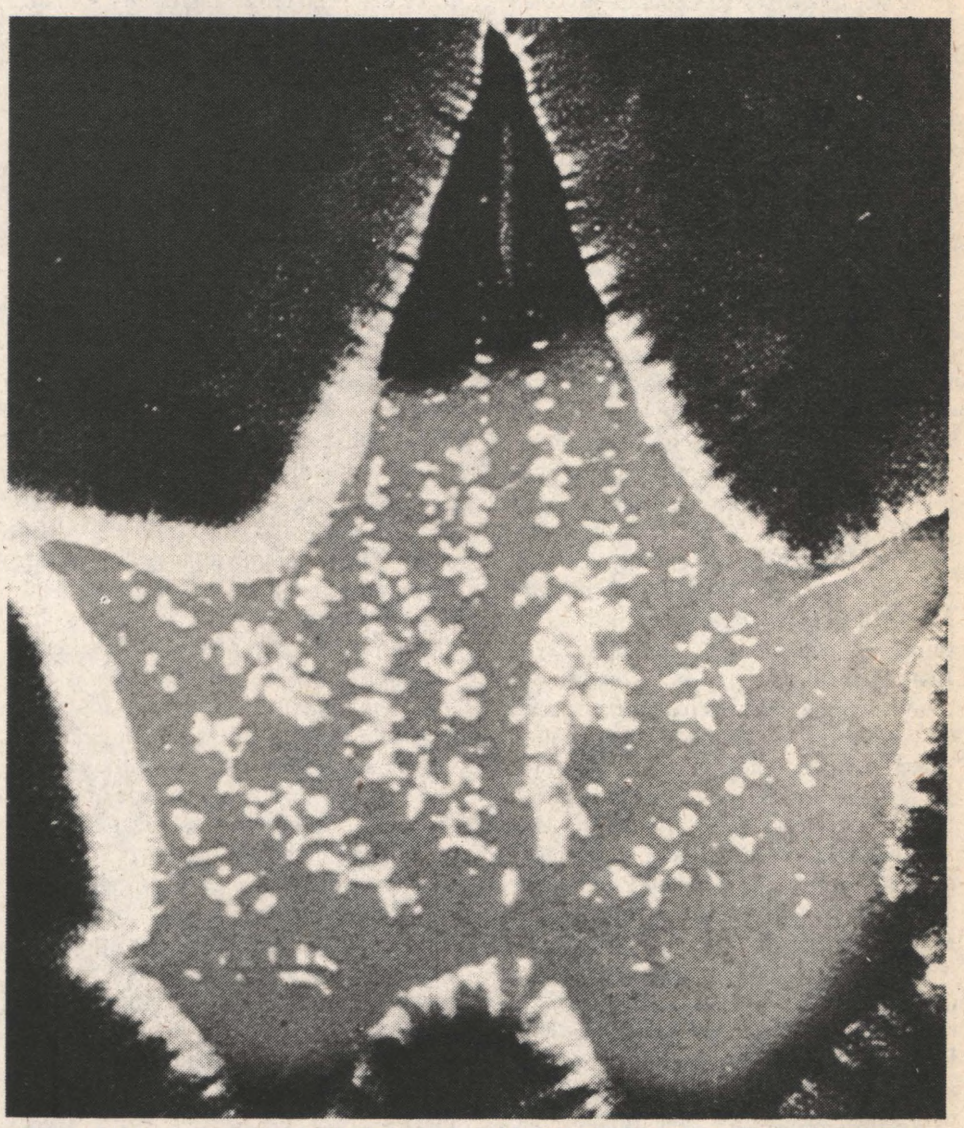


Photo of phantom-leaf effect by H. G. Andrade and Luis Zanin, Directors of Research, Brazilian Institute of Psychobiophysical Investigation.

Atoms and molecules are not perfectly round; their tendency to be oriented toward a certain direction or plane in space is called polarization. This property is closely identified with the particle-aggregate unit's electromagnetism; the greater the polarization of an atom or molecule, the greater its electromagnetic energization. (Actually, electrons, the spinning, electrically charged quantum sub-units that orbit around the outermost

limits of the atom, are the electronically active units. In a highly polarized atom, electronic activity is enhanced, i.e., the electrons are more freely reactive.)

It is possible to explain the enigmatic energy manifestation of Kirlian photography, called the "phantom-leaf" phenomenon, with the particle model we have just outlined. Before describing the explanatory model, it would be helpful to review a few basic concepts involved in the Kirlian process.

A Kirlian photographic impression is obtained by passing an artificial electromagnetic field through an object, such as a hand or a leaf, and recording the image on a plate. Photos taken in this way capture not only an image of the object but also, extending out from its edges a short distance into space, a bright and slightly hazy zone called the "aura."

The currently accepted theory to explain the aura proposes that it is essentially an atmospheric effect. This theory postulates that as the artificial energy field passes through the object, it excites electrons to escape from it into the nearby air. Supposedly these electrons then combine with nitrogen atoms in the air, ionizing them. As the nitrogen atoms quickly lose the electrons in order to return to the *un*-ionized state, they leave their image as the aura. An apparent defect in this theory is that it fails to account for a phenomenon associated with Kirlian photography called the phantom-leaf effect. The phantom effect is not constantly reproducible; some labs obtain a phantom image as much as 30 per cent of the time, while other labs seem unable to produce it at all. Technique is clearly very important; the photo must be taken very soon after the partial excision or the phantom effect will not be observed, no matter who is doing the procedure. This type of experimental effect is also seen in parapsychological testing. Researchers in telepathy, clairvoyance and psychokinesis refer to it as the "experimenter effect," i.e., experiments that appear well-controlled, impeccably documented scientifically, and which demonstrate the validity of a certain psychic phenomenon, cannot be duplicated by a second researcher. As with the Kirlian phantom-leaf effect, this has led unsuccessful experimenters and authoritative figures from the "debunker" scientific community to question the validity of the phenomenon.

It should be noted in connection with this point that leaves come from plants, and plants are said to respond to extraneous factors; for example, music is said to affect a plant's growth pattern. Mystic theorists claim that vegetative lifeforms are capable of emotion. The vast majority of phantom experiments have been done using leaves, and it may be that the way the leaf is handled affects the reproduction of auric images. Moreover, in successful attempts, if a portion of a leaf is removed with a pair of scissors and a Kirlian photo taken immediately, it is often possible to obtain an image of the piece that is no longer there. Phantom images tend to be brighter and hazier than the solid image, similar to the "normal" aura. A very important point is that *all* such photos show the phantom-portion *perfectly aligned* with the intact portion of the leaf. Referring back to the present "atmospheric" theory of the Kirlian aura, it seems reasonable that if the phantom effect were something happening "in the air," one might expect a less precisely-reproducible manifestation than the phantom exhibits.

If the phantom-effect is not due to ionization of the air by electrons from the object, what *is* it due to? It can be explained by using the particle-energy model outlined at the beginning of this article. If we assume that interactions ("collisions") between gravitons and atoms are more frequent the denser, or more crowded, the atoms are, then it follows that gravitonic emission patterns will reflect a directional orientation. By saying that gravitons (atomic energy emissions) resonate directionally with atomic mass, we are saying that the denser the atomic mass occupying a given volume of space, the greater the morphic polarization of the other atoms in the local vicinity. What this means in the leaf's case is that all its myriad atoms are in directional resonance with each other; while some gravitonic emissions may radiate out randomly into space near the leaf (aura), the preponderant gravitonic energy emissions occur within the leaf itself, because that is where atomic mass is greatest. A leaf's atomic mass corresponds with its visual shape, the surrounding space and atmosphere contributing a negligible amount of mass. Thus the atomic gravitonic emission in a leaf's vicinity normally corresponds almost exactly to the leaf's own atomic mass, and the energy emission pattern corresponds almost exactly to the leaf's shape. If a portion of the leaf is removed, the atoms that comprise the remainder would be expected to briefly "remember" it, and its shape, in the form of the overall vectored pattern traced out by their myriad gravitonic emissions. This (the gravitonic emissions) is what I believe the Kirlian effect actually represents.

The same concept — mass-directed resonance of emitted sub-atomic quanta — can also be applied to an explanatory model for the singularly peculiar physical findings in victims of spontaneous human combustion, a phenomenon for which science has no explanation at present. Such findings indicate a very different type of combustion from that with which we are familiar. To cite a typical case, a nineteenth-century physician named DeBrus reported that a man's hands were observed to burn, off and on, with a strange blue flame, after he had tried to extinguish a fire in the clothes of his brother. Many cases have occurred while the victim was resting in a chair or in bed. In quite a few cases, but by no means all, the victim was known to have recently overindulged in alcohol. Victims have ranged in age from infancy to 114 years.

Ordinary combustion is the result of heat-induced stimulated-movement of atomic and molecular particles. If a material's ignition temperature is reached, and if oxygen is present, the material will burn. In the case of organic, or biological, materials, a major component of the flammable substance is carbon; carbon dioxide is formed and a carboniferous residue is left where there has been incomplete oxidation of the burning material. In spontaneous human combustion, however, there typically is an amazing absence of residue. Dense tissues, bones in particular, are consumed *in toto*. Ordinary combustion of human tissues requires extreme temperatures — over 3000 degrees Fahrenheit. Such temperatures can be achieved only under special conditions such as are provided by a pressurized crematorium. The enigmatic aspect this seems to lend the self-ignition phenomenon is seemingly compounded by the fact that ordinarily highly-flammable clothing and upholstery that were in intimate contact with the victim are often not only unburned, but not even singed. In a carefully studied case that occurred in 1776, a priest named Don Gio Bertholi was spontaneously self-ignited. The victim's hair was not so much as singed, while the head and cap were totally consumed. In its issue of April 21, 1888, the British Medical Journal reported on a case that occurred in Colchester, England, in which the victim, an elderly drunk, was virtually totally consumed while lying in a hayloft. Although the loft was full of dry hay, both loose and in bundles, it was "not even scorched." In other cases, underwear caught fire but the outer clothing did not. Another odd result that seems to occur with fair regularity is

that the victim's hair remains unsinged although the rest of the body, including the parts to which the hair was attached, is totally consumed.

Spontaneous human combustion clearly represents a different process from ordinary combustion. This writer believes it can be explained using the same particle model we have applied to the Kirlian phantom-leaf phenomenon. In ordinary combustion, molecules and atoms are thermally stimulated, but the nuclear structure of atoms does not change. Carbon remains carbon, although it is converted to a gaseous state. In spontaneous human combustion, the absence of residues indicates oxygen availability is not a factor; in addition, it may reflect a somewhat greater consumption of the atoms themselves. The latter would occur if nuclei were breaking down and losing their sub-particulate building-blocks. When the term "thermonuclear decay" is mentioned, the chain-reaction process usually comes to mind most readily, but it does not follow that such reactions are necessarily explosive. Limited and controlled nuclear-breakdown processes occur in those situations where a certain spatial pattern of mass-energy variables exists, examples being the sun or a nuclear reactor. As it may occur in the self-ignition phenomenon, *sub*-particulate combustion would not be simply an excessive random kinetic motion of molecules and atoms, but an *accentuation* of a *pre-existing resonance — over*-resonance of the much-smaller quantum particles we call gravitons. If, as proposed above, gravitons are normally in a state of constant *directional* resonance with local atomic mass, then an *over*-resonance also would be preferentially manifested in the direction of the densest atomic mass in proximity to it. Thus, in spontaneous combustion, relatively mass-dense materials like the head and cap of a victim could be consumed, while the less-densely structured scalp-hair would not. Likewise, a victim's body might be consumed *in toto* while a light-textured material like hay would be unaffected, even when in immediate contact with the victim.

Today there is a strong feeling among scholars in the parapsychology field that, for all our Space Age achievements, our knowledge-base of physics contains a major conceptual gap, or gaps, analogous to the existence of an abysmal "black hole" in the midst of an otherwise well-ordered galaxy.



Crows, Dolphins, and Hailstones

(Comments on Previous SITU*ation* Reports)

Among the items in the previous issue which I found most interesting were the reports about the putty-eating crows in Bonn, West Germany (*Pursuit* No. 63, Third Quarter 1983, p. 135) and the rescue by dolphins of the pilot whose helicopter crashed in the Java Sea (p. 136).

Putty-eating by crows is not unique. We had a similar case recently in Tobermory, Isle of Mull, Scotland, where a huge rubbish dump was not only an eye- and nose-sore but harbored every variety of infection. Of course, vermin of all kinds contributed to the mess, not the least being the flock of "hoodies" — as hooded crows are colloquially known.

There are two sorts of crows in Europe: the black or carrion crow, and the gray or hooded crow. The former is all black; the latter has a gray saddle. Though the two species can interbreed, the hooded crow is found only along the western seaboard and in eastern Europe. We have hooded crows in Mull, but travel only a few miles inland to find only black crows.

After some twenty years of listening to complaints from the island public, followed by much deliberation, the local council finally adopted a more hygenic method of garbage disposal. As a result, the hoodies and other vermin began pecking the putty out of windows, starting with newly-built houses, then attacking older windows. The whole thing assumed plague porportions, as reported in the Oban Times newspaper and elsewhere. The general explanation fixed responsibility on the linseed oil in the putty. Linseed oil, an edible oil, attracted the birds by its smell. Being starved, they ate it and the lead as well. However, they did not seem to suffer from lead poisoning; the hoodie population declined slowly, probably from starvation, not poisoning.

On my one visit to Russia (like Napoleon and Hitler, I found one excursion sufficient) I attended a gala performance by hooded crows in Moscow, of all places. Our tour announcement had listed as a "special attraction" a nocturnal visit to Red Square to engage in illegal currency deals. (The idea is to stand in Red Square at night, talking loudly in English; after a while some fellow comes up and tries to sell you rubles for dollars.) While this was going on, I heard the familiar "kark, kark" cry from the dark sky above. Next morning I investigated, and there was a huge flock of hoodies with some Russians feeding them little bits of rotten meat. It seems the birds nest in the spires of St. Basil's Cathedral and in the towers of the Kremlin. Trust the Russians to cherish such horrible birds.

Nevertheless, hooded crows are highly intelligent, even psychic. They fly lazily overhead if you don't have a gun, but just *think about* shooting them and they disappear completely. Hoodie-shooting is the most demanding sport in which I have ever engaged. A hoodie-shoot involves complex teamwork, using cars, boats, Landrovers, rifles, shotguns, walkie-talkies, the lot. If you get a couple of birds by the end of the day, you are doing well. And if you get even one, you will be made aware of what I believe is truly unique about crows: they exhibit great distress at the death of a companion and make a fuss over the corpse, even though they must know that by so doing, they are putting themselves in danger. Quite a contrast to sheep and cattle which hardly notice the body of an erstwhile friend lying about.

As to the dolphins, they have long been known as rescuers of humans in danger of drowning. The earliest account, I believe, dates back to Roman times. Like humans, dolphins need to breathe, and a sick dolphin will likely be carried to the surface on the backs of its mates. Pushing a rubber dinghy to shore would be a natural extension of this behavior.

In recent issues of *Pursuit*, especially in the Notes of Charles Fort, there have been a number of references to remarkable falls of objects. That these falls continue to survive both time and explanation was illustrated about a year ago in the Manchester area. Very large hailstones fell, garden greenhouses were demolished, and cars severely dented, but the fall took place over an area only a few hundred yards square.

A friend preserved some of the stones in his freezer, where their size is still evident but other characteristics in doubt because they have not yet been analyzed. They should be evaluated for chemical content and the proportions of their hydrogen and oxygen isotopes measured. Any suggestions as to where and by whom this could be done will be most gratefully considered — especially by my friend who wants the stones out of his freezer.

—George Sassoon
Warminster, Wiltshire
England



The Life and Times of NIKOLA TESLA

by E. J. Quinby

Ask any electrical engineering student today to tell you something about Nikola Tesla, and you are likely to get a blank stare. Or the counter-question: Who was Tesla? It seems preposterous that our educators should have ignored entirely the "father" of our Alternating Current Age, but such is the fact. Something should be done about our technical education system!

Born July 9, 1856 in the village of Smiljan in what is now Yugoslavia, Tesla rose from relative obscurity to a top position in the scientific world. He became a millionaire at age 32 through his important inventions, but later faded into obscurity and died nearly penniless.

His father was a clergyman. His mother, though she never learned to read and write, was known in the community as an inventor of domestic labor-saving devices, and it is to her that Tesla attributed much of his inventive genius. The young Tesla, opposing his father's urging to study for the ministry, insisted on a career in engineering. His mother encouraged him. He attended the polytechnic school at Graz (now part of Austria), specializing in physics and mathematics, and continued his education at the University of Prague. There he took a course in foreign languages so that he would be able to read foreign technical literature. He became proficient in English, French, and Italian, in addition to German and his native Serbian.

Finishing at Prague in 1880, he took a post-graduate course in Budapest, where he debated the merits of alternating current with his professors. He then went to work for a Paris telephone company, where he acquired considerable experience with DC dynamos and motors.

Problems with Direct Current

In those early days, direct current was universally acknowledged to be the only practical medium for generating, transmitting, and using electricity for heat, light, or power. But DC resistance losses were so great that a power plant was needed for every square mile served. Early incandescent lamps, glowing none too brightly on 110 volts even close to the power plant, became pitifully dim on the power that dribbled from the lines less than a mile away. And everyone believed that motors could run only on DC. An alternating-current motor was considered an impossibility.

That was the picture when, in 1884, young Tesla stepped off a ship in New York, his head full of ideas, and four cents in his pocket. His experience had convinced him that the commutator in direct-current motors and dynamos was an unnecessary complication, causing endless troubles. He realized that the "DC generator" actually produced AC, which was converted to DC by the commutator. Then, to get that DC to produce rotary motion in a motor, the process had to be reversed. The armature of each electric motor was equipped with a rotating switch (commutator) that changed the polarity of its magnetic poles just at the right instant as it rotated to supply AC to the motor

To Tesla, that was sheer nonsense. It seemed much more logical to eliminate the commutator at both generator and motor, and use AC through the whole system. But no one had ever built a motor that could operate on alternating current, and Tesla struggled mentally with the problem. Then one day in February, 1882, while strolling with a classmate named Szigetti in a Budapest park, he suddenly blurted out: "I've got it! Now watch me reverse it!" At that moment he had visualized the rotating magnetic field, which would revolutionize the whole electrical industry. He saw the magnetic pull racing around the stationary field (stator) of his motor while the armature (rotor), attracted by the moving field, chased around after it faster and faster until it was revolving at the same rate. He would need no switching to the rotating element — no commutator!

Subsequently he worked the whole alternating-current electrical system out in his mind — including alternators, step-up and step-down transformers for economical transmission and delivery of electric power, and AC motors to supply mechanical power. Impressed by the wealth of available water power going to waste around the world, he visualized the harnessing of that great supply with hydro-electric plants capable of distributing the power to where it was needed. He startled fellow-students in Budapest by announcing: "Some day I will harness Niagara Falls."

The opportunity and fortune Tesla sought in the promised land did not come easily. When he met Edison, then actively engaged in developing a market for his incandescent lamp through his pioneer Pearl Street plant in New York, Tesla began with youthful enthusiasm a description of his alternating-current system. "You are wasting your time on that theory," the great man told him, dismissing the idea promptly and finally.

For a year the tall, gaunt Yugoslav struggled to keep from starving in this strange land. At one point he dug ditches to make a living. But the foreman of the Western Union ditch-digging project on which he was working listened to the visionary descriptions of new electrical systems that Tesla related during lunch hours, and introduced him to a company executive named A.K. Brown. Fascinated by Tesla's vivid plans, Brown and an associate decided to take a flyer. They put up a limited amount of money, with which Tesla set up an experimental laboratory at 33-35 South Fifth Avenue (now West Broadway). There Tesla set up a complete demonstration of his system, including a generator, transformers, transmission line, motors, and lights. He worked tirelessly, and without drawings; the plans for every detail were indelibly etched in his mind. He even included two-phase and three-phase systems.

Professor W.A. Anthony of Cornell University examined the new AC system, and promptly announced that Tesla's synchronous motor was equal in efficiency to the best DC motors.

Alternating Current Arrives

Tesla attempted to patent his system under a single comprehensive patent covering all its components. The Patent Office would not approve the all-in-one application, insisting on

separate applications for each important idea. Tesla's applications, filed in November and December of 1887, resulted in the granting of seven U.S. patents in the next six months. In April 1888, he filed for four more patents, covering his polyphase system. Those too were promptly granted, as were 18 more U.S. patents later in the year. Numerous European patents soon followed. Such an avalanche of patents, so promptly issued, was without precedent. But the ideas were so novel — completely absent was any element of interference or "anticipation" — that the patents were issued without a single challenge.

Meanwhile Tesla staged a spectacular lecture and demonstration of his AC system — single-phase and polyphase — at a meeting of the AIEE (now the IEEE) in New York. The engineers of the world were made aware that the limitations on electric-power transmission by wire had been removed, opening the door to tremendous expansion.

But who would adopt this obviously better system? Certainly not the established Edison-General Electric organization — it would have made their whole investment obsolete. Apparently Tesla was stuck with no market, no customer for what he had to offer.

It was at that moment that George Westinghouse walked into Tesla's laboratory and introduced himself. Tesla was then 32 years old, Westinghouse 42. Both were capable inventors, accomplished engineers, and electrical enthusiasts. Westinghouse listened to Tesla's explanations, watched his demonstration, and quickly made up his mind.

"I will give you one million dollars cash for your alternating current patents, plus royalties," offered Westinghouse.

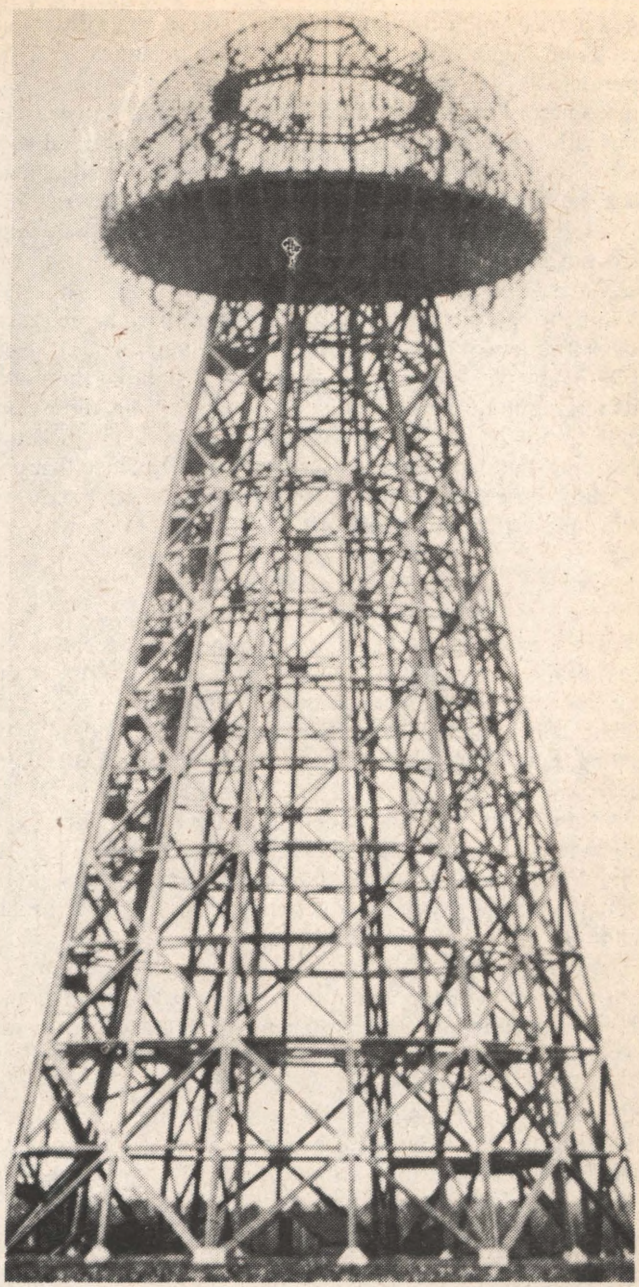
"Make that royalty one dollar per horsepower, and it's a deal," replied Tesla, without apparent excitement. As simply as that, the two men arranged the historic deal and shook hands on it.

Tesla had arrived. But he was not a man to forget those who had placed their faith in his ideas, and promptly signed over half his million-dollar fee to Brown and his associate, who had financed his laboratory. Although Westinghouse's backers later forced him to get a release from Tesla on the dollar-per-horsepower part of the agreement, such was the friendship that had developed between the two men that an amicable settlement was quickly reached. Tesla relinquished the royalties that would have supported him and his research efforts for the rest of his life.

The phenomenal success of the Westinghouse AC systems across the nation made it clear to General Electric engineers that they would have to get a license from Westinghouse if they were to keep up with the rapidly expanding electrical industry. The license — negotiated at a handsome fee — was a feather in Tesla's cap; he never forgot Edison's statement that there was no future in alternating current and that experimenting with it would be a waste of time.

A Dream Realized

In 1890, the International Niagara Commission began its search to find the best way of using the power of Niagara Falls to generate electricity. The scientist Lord Kelvin was appointed chairman of the commission, and immediately announced that a DC system would obviously be best! It was not easy to challenge that world-famous authority, but Kelvin eventually came to realize that if power were to be transmitted even the 26 miles to Buffalo, AC would be necessary. Thus, it was decided to use Tesla's system and generate AC with massive water turbines. Bids were invited by the newly formed Cataract Construction Co. in 1893. Westinghouse won the contract for ten



Tesla's "world-wide wireless" tower on Long Island was 200 feet high and the hemispherical top was about 100 feet in diameter. The project was never completed and the tower was dismantled during World War I.

5000-horsepower hydro-electric generators, and General Electric the contract for the transmission system. The whole system including the line and the step-up and step-down transformers followed Tesla's two-phase design. He designed the big alternators with external revolving fields and internal stationary armatures, to minimize the weight of the moving members.

That historic project created a sensation, for nothing of that magnitude had been attempted up to that time. The ten big 2250-volt alternators, revolving at 250 rpm and delivering 1775 amperes each, produced an output of 50,000 horsepower, or 37,000 kilowatts, 25 Hz, two-phase. The rotors were 10 feet in diameter and 14 feet long (actually, 14 feet high in those vertical generators) and weighed 34 tons each. The stationary members weighed 50 tons each. The voltage was stepped up to 22,000 for transmission.

Tesla's pioneer work in radio ("wireless" as it was then called) went beyond just Morse code communication. In 1898 he

staged a spectacular demonstration of remote control without wires at the original Madison Square Garden in New York City. A portentous Electrical Exhibition was then in progress, and in the center of the vast arena where Barnum and Bailey's circus usually performed he had a large tank built and filled with water. Afloat on that small lake he had a 3-foot iron-hulled boat. Inside the hull was a radio receiver and an assortment of electric motors, driven by a storage battery, to perform various shipboard functions. The receiver's antenna was mounted on the boat's mast.

From the opposite end of the auditorium, Tesla put the vessel through a variety of maneuvers, including sailing forward, steering left and right, stopping, reversing, and lighting the lights in its rigging in response to audience requests. The impressive demonstration of course "stole the show" and made the front page of the daily newspapers. But how many dreamed that one day, using those same radio-remote-servo-control principles, we would land a man on the moon?

Mathematical Wizardry

Tesla's mathematical genius stood him in good stead in the design of the AC equipment for Westinghouse and GE. (In his early student days, he solved complex problems in his head, without pencil and paper. His teachers suspected him of cheating, but young Tesla, it turned out, had memorized whole logarithmic tables!) The now-established frequency of 60 Hz stems from Tesla's mental calculations, which convinced him that it was the most practical frequency for commercial use. At higher frequencies, AC motors would become inefficient; at lower frequencies they would require too much iron. Lights would also flicker at low frequencies.

Though the original Niagara Falls plant was designed for 25 Hz to accommodate the limitations of the early Westinghouse turbine generators, subsequent expansion included conversion to 60 Hz. Today power from Niagara is transmitted all the way to New York City, 360 miles away, and at times is fed over the Northeast power grid for much greater distances. Remember, when Tesla arrived in New York, the limit for efficient power-transmission was less than a mile!

High-Frequency Pioneering

During his research in high voltage and high frequency, Tesla adopted a most sensible practice. When handling high-voltage apparatus, he always kept one hand in his pocket. He insisted that all his laboratory assistants take that precaution, and to this day that is always done by sensible experimenters when working around potentially dangerous high-voltage equipment.

Tesla's work with high frequencies and in the field of high voltage paved the way for modern electronics, although the word had not yet even been coined. With his unique high-frequency transformers, now called Tesla coils (see cover), he showed that he could actually pass millions of volts harmlessly through his body to glow-tube lamps held in his bare hands. They would light up to full brilliancy from the high-frequency, high-voltage currents. In those early days he was actually demonstrating neon-tube and fluorescent-tube lighting!

Tesla's experiments with high and low frequencies sometimes had unexpected results. Studying slow mechanical vibrations, he caused a virtual earthquake in the vicinity of his new laboratory on Houston St. in New York City. His mechanical oscillator, operating at close to the natural period of the building itself, threatened to tumble the old structure. Furnishings in a police station over a block away began to dance around mysteriously as Tesla confirmed his mathematical theories of resonance, vibration, and "natural periods."

World's Most Powerful Transmitter

Investigations of high-voltage and high-frequency electrical transmission led Tesla to build and operate the world's most powerful radio transmitter on a mountain near Colorado Springs. Around the base of a 200-foot mast, he build a 75-foot diameter air-core transformer. The primary was only a few turns of wire. The secondary within it was 100 turns, 10 feet in diameter. Using power from a generating station several miles away, Tesla created the first man-made lightning. Deafening bolts 100 feet long leaped from the 3-foot copper ball at the top of his mast. He was using voltages of the order of 100 million — a feat not to be equalled for a half-century.

Tesla burned out the power-plant generator with his first experiment, but repairing it, continued his experiments until he was able to transmit power without wires for a distance of 26 miles. At that distance he was able to light a bank of 200 incandescent lamps — a total of 10 kilowatts. Fritz Lowenstein, later to become famous for his own radio patents, witnessed that spectacular accomplishment as Tesla's assistant on the project.

By 1899, Tesla had somehow spent the last of the money he got from Westinghouse for his AC patents. Colonel John Jacob Astor came to his financial rescue, and put up the necessary $30,000 for the Colorado Springs experiments. Now that money was also gone, and Tesla returned to New York.

Enter J.P. Morgan

In New York, Tesla was prevailed upon by his friend Robert Underwood Johnson, editor of *Century* magazine, to write a feature story describing his accomplishments at Colorado Springs. But the story Tesla turned out proved to be an involved discourse on the subject of philosophy and "the mechanical process of humanity." Although of the highest literary quality, the treatise said little about the powerful transmitter at Colorado Springs. Johnson had to return the manuscript three times before getting some covereage of the subject he had requested.

In the end, the article was published under the title "The Problem of Increasing Human Energy." It created a sensation when it appeared in print. One of the readers who was deeply impressed was John Pierpont Morgan, who had financed the General Electric Co. in its pioneer DC days, and later, its part in the Niagara Falls project. Morgan was fascinated by the genius of Nikola Tesla, by his spectacular accomplishments, and by his winning personality. Tesla soon became a regular guest at the Morgan home. Impeccably dressed, always the polished gentleman with European manners and cultured speech in several languages, Tesla became a favorite of New York and Newport society. Many prominent matrons regarded him as a "good catch" for their daughters, but Tesla insisted that there was no room in his life for women and romance — they would interfere with his research efforts.

Historians differ on what motivated Morgan to finance Tesla's next big project. Some believe that he was genuinely interested in the wireless transmission of power. Others argue that — in the light of subsequent developments — it seems obvious that Morgan's interest was in getting control of Tesla and his achievements to protect the Morgan investments in the electrical industry.

Finding that Tesla was broke again, Morgan agreed to under-

write Tesla's project of transmitting electric power without wires. In 1904, Tesla acknowledged in *Electrical World and Engineer* magazine: "For a large part of the work I have done so far I am indebted to the noble generosity of Mr. J. Pierpont Morgan."

From that alliance sprouted the fantastic "world-wide wireless" tower on Long Island (see photo, page 177). Its design embodied many of Tesla's boldest dreams.

World-Wide Wireless

The strange structure that slowly rose near Wardenclyffe, in the hilly portion of Long Island, mystified all observers. Resembling a huge mushroom, except that it was not solid, it had a lattice-work skeleton, broad at the base and tapering toward its 200-foot top. There it was capped by a 100-foot diameter hemisphere. The structure was made of stout wooden members joined by copper gussets bolted to the wood with sturdy bronze bolts. The hemispherical top was draped over its upper surface with copper mesh. There was no ferrous metal in the entire structure.

The famous architect Stanford White became so interested in the project that he did the design work without charge, assigning one of his best designers, W.D. Crow, to the task.

Tesla commuted daily to the construction from his quarters in the old Waldorf-Astoria Hotel on 34th St., riding the streetcars to the East 34th St. ferry, then the paddle-wheel steam ferry to Long Island City and the Long Island Railroad to Shoreham. The railroad's dining service prepared special meals for him so that his supervision of the project would not be interrupted.

When the 100-foot-square brick power plant was completed near the base of the big tower, Tesla began moving his Houston Street laboratory into the structure. Meanwhile, various annoying delays were encountered in the manufacture of the radio-frequency generators. Several glassblowers were busy fashioning special tubes, the design of which remains a mystery to this day.

Tesla's Vision

Meanwhile, Tesla issued a descriptive brochure that revealed his far-reaching insight into the future of the great industry that at that time (1904) was limited to dot-and-dash telegraphy. That document has persuaded many that the man was actually clairvoyant. He announced that the world-wide wireless system was being prepared to provide a variety of facilities, most of which we take for granted today. They included the interconnection of the existing telegraph exchanges all over the world; the establishment of a secret and non-interferable and non-interfering government telegraphy service; the interconnection of all telephone exchanges in the world; a worldwide news distribution service in connection with the press; a worldwide private communication service; the interconnection of all stock tickers of the world; inexpensive clocks that required no attention yet were very accurate; the transmission of typed or handwritten characters; the establishment of a marine navigation system, and more. Much of what he described became reality within his lifetime.

In the *Electrical World and Engineer* of March, 1904, Tesla revealed that the Canadian Niagara Power Co. had offered him inducements to locate his wireless power-transmission project at their plant, and that he proposed to use those facilities to distribute 10,000 horsepower at a potential of 10 million volts.

The Niagara project never materialized, but may have had some influence on the fate of the spectacular Long Island project. For reasons that have never come to light, J.P. Morgan had a change of heart, and Tesla's financial fountain suddenly went dry. At first Tesla refused to believe that Morgan would not arrange for the nearly finished job's completion, but Morgan's withdrawal was abrupt and final. Historians of the industry wonder why. Did Morgan lose patience? Did engineers of high repute convince him that Tesla's visions, so openly revealed in the brochure, were nonsense, and that he was wasting his money on a hopeless dream? Did he suspect that Tesla was diverting time and money to the Niagara project? The facts will probably never be known. Tesla said, however, that Morgan "carried out his generous promise to the letter and it would have been most unreasonable to expect from him anything more." But almost in the same breath, Tesla said, "I am unwilling to accord to small-minded and jealous individuals the satisfaction of having thwarted my efforts. These men are to me nothing more than microbes of a nasty disease. My project was retarded by laws of nature." As for the tower, it was dismantled, although with considerable difficulty, for "security" reasons during World War I.

The Radio-Frequency Alternator

As early as 1890 Tesla built high-frequency AC generators. One, which had 384 poles, produced a 10-kHz output. He later produced frequencies as high as 20 kHz. More than a decade was to pass before Reginald Fessenden developed his RF alternator, which had an output of 50 kilowatts. That machine was scaled up to 200 kilowatts by General Electric, and put on the market as the Alexanderson Alternator, named after the man who had supervised the job and who had built some of Fessenden's earlier alternators.

When it appeared that British interests (already in control of most of the world's cables) were about to acquire the patents for that machine, the Radio Corporation of America was organized at the urgent suggestion of the United States Navy. The new company was formed in 1919, around the Marconi Wireless Telegraph Co. of America, and the powerful but inefficient Marconi spark transmitters were replaced by the highly successful RF alternators. The first one was installed at New Brunswick, New Jersey, at radio station WII. The machine produced a 200 kilowatt, 21.8-kHz signal, and handled commercial traffic that previously was transmitted over cable. That was the first continuously reliable trans-Atlantic radio service. Those alternators performed so well that a whole battery of them was ordered; they were installed at Radio Central, Rocky Point, Long Island. Ironically, it would have been almost in the shadow of Tesla's tower, if that structure had still been standing.

Thus Nikola Tesla's world-wide wireless dream was fulfilled some three decades after he initiated the project, and right where he started it, using the type of transmitter he devised.

One of the giant radio-frequency alternators has been preserved in the Smithsonian Institution; it served originally at trans-Atlantic transmitter station WSQ at Marion, Massachusetts.

Radar and Turbines

Tesla continued active research in many fields. In 1917 he suggested that distant objects could be detected by sending short-wave impulses to them and picking up the reflected impulses on a fluorescent screen. (If that doesn't describe radar, what does?) He described cosmic rays 20 years before other scientists discovered their existence.

At various times up to 1929, he devoted his attention to a "bucketless" high-speed turbine for steam or gas. Friction be-

tween the increasingly irascible Tesla and some of those working with him on tests at the Edison Waterside power plant and in the Allis-Chalmers factory did not help his cause, but many respected engineers today agree that we have not heard the last of the Tesla turbines with their smooth-rotor discs.

As the years passed, less and less was heard from him. Occasionally some reporter or feature writer would look him up and manage to get an interview. His prophecies became increasingly strange and involved, leaning toward the abstract and delving into the occult. He never acquired the habit of writing notes, always claiming (and proving) that he was able to retain complete detailed data on all his research and experiments in his mind. He said that he intended to live to 150, and upon reaching age 100, would write his memoirs, which would include a detailed record of all of the data he had compiled. At his death, during World War II, the contents of his safe were impounded by military authorities, and nothing has been heard since as to what records, if any, were there.

One of the peculiar inconsistencies of Tesla's character was revealed when two high honors were offered him, and he rejected the one but accepted the other. In 1912 it was announced that Nikola Tesla and Thomas A. Edison had been chosen to share the Nobel Prize, including the $40,000 honorarium. Tesla could well have used the $20,000 at the time. Nevertheless, he flatly refused to share an honor with Edison. However, when in 1917 the AIEE's Edison Medal — founded by anonymous friends of Edison — was awarded to Tesla, he was persuaded to accept it, after first refusing.

The Esteemed Eccentric

Tesla's natural demeanor was that of the aristocrat. With the passage of time and depletion of his resources, he sank into a condition of genteel poverty. Continuing to live in the best hotels, his credit would become exhausted and he would be forced to seek other quarters. Finally, moving into the newly opened New Yorker, he found his problems solved. Some of the organizations for which he had made millions arranged with the hotel management to take care of the aging genius.

Tesla insisted on carefully wiping each item of silverware, china, and glass before starting a meal, using a fresh napkin for each. In view of that effort to achieve perfect sanitation, it seems inconsistent that the maids reported Tesla's room to be an "unholy mess." It wasn't Tesla's untidiness they complained about — it was the pigeons! When he was not feeding them out in the park, he fed them in his room, where he left the window open so they could come and go.

The gold-plated telephone beside his bed, over which he could speak to anyone anywhere in the world without charge, was the roost of his favorite pigeon, a white one with gray-tipped wings. "When she dies, I will die," predicted Tesla. And so it was that one day in January 1943, that favored bird paid him her last visit. "She was dying," lamented the lonely, unhappy Tesla. "I got her message, through the brilliant beam of light from her eyes."

One of the maids, observing that the "Don't Disturb" sign had been hanging on Tesla's doorknob for an unusually long time, used her passkey to investigate. Tesla had passed to his reward, leaving his gaunt 87-year-old frame peacefully in bed. The maid fed the mourning pigeons, gently ushered them out, and closed the window.



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Comments on the

Part II
The Secret of Electrical Free Energy

Present electromagnetic theory is only a special case of the much more fundamental electromagnetism discovered by Nikola Tesla at the turn of the century.

Pure vacuum is pure charge flux, without mass. The vacuum has a very high electrical potential — something on the order of 200 million volts, with respect to a hypothetical zero charge.

Thus in an ordinary electrical circuit, each point of the "ground" — which has the same potential as the vacuum — actually has a non-zero absolute potential. This curcuit ground has a value of zero only with respect to something else which has the same absolute electrical potential.

Voltage, which is always associated with a flow of electrical "mass" current (even if only a miniscule flow), is, by definition, a difference dropped in potential when a charge mass moves between two spatially separated points. What we have termed "electrical current" only flows where there is a suitable conducting medium between things which have a difference in absolute potential. Furthermore, between any two points in any material, there is considered to exist a finite resistance — if we apply a voltage and have a mass current flowing between the two points! The simple statement that V = IR irrevocably ties together voltage drop, mass current, and resistance between two points. Rigorously, to have one of the three is to have them all. To lose one is to lose all three. Immediately we see a major error in present theory: One can have a "difference in scalar potential" between two points without having a "voltage drop" between them. Specifically, if no mass current flows between them, no resistance exists between them, and no voltage drop exists between them.

In the same fashion, one can have a "scalar wave" through the vacuum without a voltage wave. In that case, the wave has no E-field and no H-field. The only reason one has a E-field around a statically charged object is because the charged electrons accumulated on the object are actually in violent motion. It is this motion of the charged masses that produces E-field — as well as H-field whenever that entire E-field ensemble moves through laboratory space.

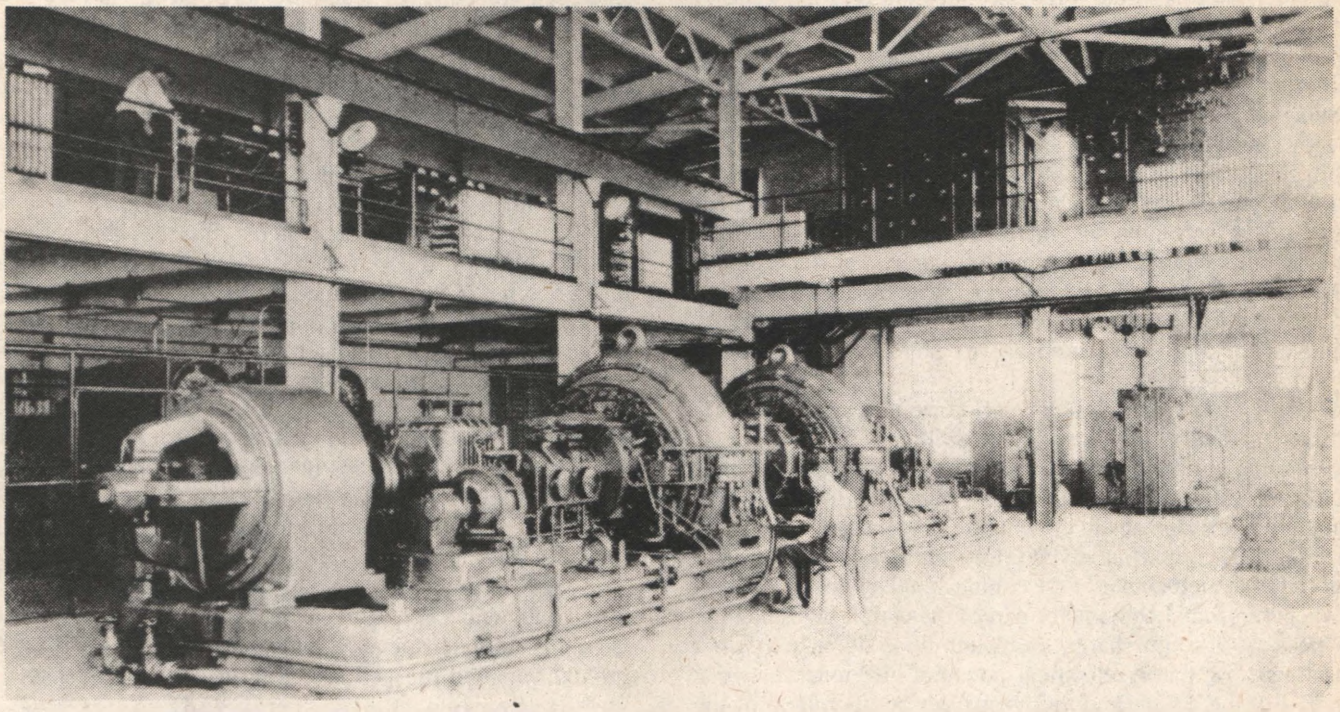
Now let us reason together in the "approximate" manner utilized in present electromagnetic theory. For example, let us examine a bird sitting on a high tension line.

The bird sits on the high tension line without a flow of mass electricity, because there is no significant difference in potential drop between the bird and the line. Specifically, between the bird's two feet — each in contact with a different portion of the line — there exists no potential difference. This is true even though, with respect to the vacuum, each foot is at a potential that would be "100,000 volts higher," were a mass current flowing. And it is true even though the absolute potential of each foot may be some 200.1 million "volts," were a mass current flowing.

Now an interesting thing happens to the bird when he flies through the air to light upon the high tension wire. As he flies

New Tesla Electromagnetics

by T. E. Bearden



Radio-frequency alternators, such as this earliest one installed at New Brunswick, New Jersey, made possible the first reliable intercontinental radio communications and validated Tesla's concept of "world-wide wireless."

toward the wire, he is flying through the massless electrostatic potential field of the wire, for that field extends an infinite distance away from the wire. The electrostatic potential field — pure O-field — is actually the spatio-temporal intensity of the massless charge at a point. In other words, as the bird flies to the wire, he flies into an increasing "massless charge" potential, building up to 100,000 "volts" higher than the earth. However, very little (if any) "mass flow" potential difference is experienced upon his body in approaching the wire, and so essentially no "charged mass currents" are induced in his body. Thus the little flier safely navigates into the teeth of a very high electrostatic potential, lights upon the wire, and is not "fried" in the process. When he lights on the wire, his body has reached the electrostatic potential that each foot's contact point has. Again, there is no mass current flow. But his body is immersed in an increased flux of massless charge — which is what the electrostatic potential represents. And each "virtual particle" flow in that charge potential represents a "massless (scalar)" electrical current.

The point is, one can have any amount of massless charge flow — "scalar" current — without any mechanical work being done in the system. All electrical work in a circuit is done against the physical mass of the charged masses that flow. Rigorously, force is defined as the time rate of charge of momentum. Even in the relativistic case where $F = ma + v(dm/dt)$, change of momentum requires mass movement. No mechanical work, and hence no energy, is expended by massless charge flow.

That is why the vacuum massless charge — which is composed of a very high flux of massless "particles" — normally does no work on our systems, and expends none of its very high "potential energy." It is exactly the same as the bird which flew into an increasing scalar field as it approached the high tension wire — no work was done upon the bird by the increasing scalar flux currents encountered by its body.

By existing "in the vacuum," so to speak, we (the whole earth) are as birds sitting on a high tension line! Until we create significant difference in potential, via our present electromagnetic circuits, no current can flow — anywhere. Even if we produce potential differences, we must have a conductor and charged masses to flow, if we wish to produce mechanical work. Presently our electromagnetic theory allows us to create a difference in potential within different parts of a circuit, but only by moving and shifting charged mass. We therefore have to do work on this electrical mass in moving it around, and we only get back the work we have put into the circuit. In other words, presently all we do is "pump" electrical mass.

Now notice what would happen to the bird on the line if we substantially "pulsed" the potential on the line. Suppose we "pulsed" it such that the bird's physical system — considered as a circuit containing a capacitance, a resistance, an inductance, and many free electrons — became resonant to the pulsing frequency. In that case the "bird system" would resonate, and a great deal of electrical mass would surge back and forth in the body of the bird. In the bird's body, voltage would exist, charged mass current would flow, work would be done, and the bird would be electrocuted.

Also, note that, without mass movement, electromagnetic vector fields are not produced (and a portion of the difficulty lies with the actual vector mathematics itself). Scalar (nonvector) waves continually penetrate "space" where there is no mass movement. This means there can exist a "delta-O" without a voltage or an E-field. The present theory does not allow this, because it always uses "q" (charge) to be charged mass. Briefly, without belaboring the point, let us just say that it is the mechanical spin of the individual charged particle — such as

the electron — which "entangles" or "knits together" or "couples" independent scalar waves into vector waves. A vector wave is simply two coupled scalar waves. The entire force field concept — such as the E-field and the B-field — is operationally defined in terms of the force exhibited on a test particle, or test mass. Rigorously, an E-field does not exist as a force field in vacuum, but as two coupled scalar O-fields "tumbling about each other." When these two coupled, tumbling fields meet a spinning electron, e.g., the force emerges on the electron mass. In short, movement of a rotating mass changes delta-O to "voltage", creating the V/I/R triad.

By "accumulating charged mass particles" — such as electrons — one certainly can increase the value of O, which represents the charge intensity or "scalar electrostatic potential." However, that is not the only way to increase it. Resonance and rotation of charged masses can also be appropriately employed to vary the vacuum charge potential O, under the proper circumstances.

By the correct application of rotary principles and Tesla electromagnetic theory, it is possible to oscillate — and change — the vacuum potential itself, in one part of an electrical system. Thus by correct procedures a part of a system can be electrically altered so that the absolute value of its "ground" (vacuum) potential differs significantly from the normal vacuum-ground potential of the remainder of the circuit. In other words, we shift the vacuum-ground potential of part of the circuit by oscillating the massless vacuum charge itself, and in so doing we gain a substantial, oscillatory electrical potential difference between that part of the circuit and the normal ground potential of the rest of the system. Then we connect the two parts of the system by means of a conductor containing a load in the middle.

In every conductor, a large number of "free electrons" are available. If we oscillate the actual vacuum charge itself, unlimited additional free electrons also become available from the Dirac sea, since partial "unstripping" of the negative energy wells (each containing an electron) occurs. This "unstripping" of the potential of the well is due to vacuum potential oscillation, which oscillates time as well as space. To a negative energy well (positive time), the oscillation of its "time stream" increases the well's negative potential during one half-cycle and decreases its potential for the other half-cycle. Thus during half the oscillatory cycle, negative energy electrons may be lifted from the Dirac sea if the oscillation is sufficiently intense.

Therefore we obtain an attendant voltage and flow of mass current through the load. This voltage and current, by the way, are essentially limitless, and are free for the asking, assuming the proper "vacuum oscillation" is initiated and maintained so that electrons are continually being lifted from the Dirac sea by the time oscillations, and fed into the circuit.

Standard electromagnetic theory assumes that the vacuum potential is zero. It does not recognize the existence of massless charge, separated from charged mass. Therefore, orthodox scientists have never looked for a way to engineer the vacuum, because they have not realized it is composed of pure massless charge. Electrical physics has almost hopelessly confused charge and charged mass, thereby eliminating scalar longitudinal electrostatic waves. Expressed in the bird/high tension line analogy, the present electromagnetic theory restricts us to walking along the high tension line, laboriously carrying small batteries and power units, unaware of the limitless, surging power beneath our very feet.

Electromagnetically, we have been rather like one of the five blind men who touched an elephant. We have only touched one small portion of the electromagnetism "elephant," yet we thought we had grasped the entire beast.

ACKNOWLEDGMENT

Again I wish to express my deep appreciation to two of my friends and colleagues who at this time, I believe, wish to remain anonymous. I thank them both for their exceptional contributions and stimuli, and their forbearance with the many discussions we have held on this and related subjects.

Also, it goes without saying that any errors in this paper are strictly my own, and not the fault of either of my distinguished colleagues.



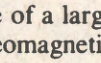
Unidentified Areas of Obfuscation

(Continued from page 157)

if it affects molecular pulsing. In fact, time-loss on watches and mental time-befuddlement has been reported by pilots navigating in the Bermuda Triangle and by various UFO contactees.

A person could run on this way speculatively without limit and nothing concrete could come out of it, so I offer a specific incident which occurred to me in company with the photographer George Brown in the Catskill Mountains near Poughkeepsie, New York. The Catskills, like the Bermuda Triangle, have been reported for centuries to be "haunted." While driving me to Boston to interview a UFO contactee, George took the wrong turn and went up in to the Catskills instead of straight north. (It was understandable that he might automatically make the wrong turn, since his brother lived in Poughkeepsie.) Once we were up in the mountains, the fog closed in. We came to an intersection near a highway interchange and George turned left, directly into a strange ground fog which seemed to have a definite "interface" between the clear air and the foggy, unlike normal fogs which billow and taper at the edges. Ten seconds after the car turned, we went into a skid and began to move sideways into the path of a car coming full speed in the other direction. I remember being incredulous about this impending accident since I was sure that we were going to get to Boston; I was also sure that we were going to crash into the oncoming car! However, we passed within one inch of the side of the oncoming vehicle by jack-knifing sideways, and then somehow moved forward and then sideways again across the highway and the dividing median, ending up safely positioned on the right side of the exit leading from the interchange.

Having been over this incident many times in retrospect, I am convinced — and so is George, the driver — that extraordinary intervention caused the car to move the way it did like a little bumper-toy on remote control. I am also certain, though I cannot "prove" this, that the instantaneous fogging just before we went into the skid was part of the atmospheric precondition which assisted in affecting the behavior of the car. Perhaps George and I — both being psychic — interlinked to save ourselves under unusual conditions by psychokinetically affecting the steering mechanism of the car. I would be extremely interested in hearing other stories about unusual fogging as connected with UFO, ghost and engine animation and/or deanimation by what appear to be intelligent energies. It may be that disks are the source of a larger AREA alteration which is similar to the natural geomagnetic difference in areas such as the Catskills and the Great Lakes iron range.



SITUations

In this section, mostly contemporary curious and unexplained events are reported. Members are urged to send in newsclippings and reports they deem responsible. Please be sure to include the source of reference (name of newspaper or periodical), city of publication, date of issue in which article appeared, and your first initial and last name (or membership number only, if you prefer to be credited in that way).

Scrambled Bird Brains

About 1,500 collisions between birds and planes are reported by pilots each year. The Federal Aviation Administration estimates that the birds cause between $20 million and $40 million damage annually to aircraft engines, and sometimes the encounters cause crashes.

Allen Counter, a professor of neuroscience at Harvard, believes that when the birds fail to notice a plane coming, they cannot hear it. However, the roar does more than damage their hearing. "It scrambles their brains," he told a November meeting of the Neuroscience Society.

He based his conclusions in part on a comparison of the hearing of seagulls captured at Logan International Airport in Boston and those captured on Monomy Island off Cape Cod. He wired the birds with electrodes that measured electrical impulses produced in the birds' brains when they hear something. Then he turned on a jet-noise simulator. All but 10% of the activity stopped inside the part of the birds' brains responsible for hearing.

Noting that hundreds of birds congregate on the ends of runways, especially at airports near water, Counter asserted that many of those birds have listened to jets all their lives and serious loss of hearing results. They "are exposed every 40 seconds to anywhere from 90 to 100 decibels. That's a lot of noise. The brain response is obliterated; the noise masks out any synchronized signal," he said. As a result, the birds do not hear the planes and are also unaware of warning cries from soaring gulls that spot inbound and outbound aircraft.

SOURCE: AP in *Asbury Park Press,* 11/27/83. CREDIT: Member #432.

Macho Birds, Texas Style

As Prof. Counter was preparing his report on jet-deafened birds for the meeting of the Neuroscience Society, Texas wildlife biologists were faced with a different kind of bird mystery. Eight years after witnesses sighted a large feathered creature gliding over the streets of San Benito, reports of the legendary "Big Bird" continued to disquiet the Rio Grande Valley. Outsize birds have also been spotted over the past four years in the Big Bend area of Texas, 650 miles northwest of the area where the first sightings occurred.

Notable among many sighting reports from south Texas in 1975-'76 was one from school children at Robstown who said they saw a winged creature zoom by their playgound, and residents at Rio Grande City reported a "Big Bird" roosting on the Starr County Courthouse roof.

Descriptions of the flying creature vary. To some witnesses, what they saw was an extremely large feathered bird; others have noted only a shadowy, pterodactyl-like silhouette.

In a recent encounter, paramedic James Thompson reported seeing "a pterodactyl-like bird" ten feet long glide like a model airplane across the road as he drove his ambulance along a highway four miles east of Los Fresnos. Thompson said his co-workers nicknamed him "Bird Man" after he told a newspaper about the sighting, but he doesn't feel harassed. "I know what I saw," he declared. "It had a black or grayish rough texture. I'm quite sure it was a hide-type covering."

Thompson said the creature's head looked something like a Brahma bull's hump on the back — "almost no neck at all," a small pouch near its throat "something like a pelican's pouch," and a tail that ended in a kind of fin.

A similar description was given by three San Antonio schoolteachers who were driving from one campus to another when they spotted two large birds circling over some cattle south of San Antonio. In the school library they found drawings and photographs of fauna restorations; those which most closely resembled the creature they saw were of the pterodactyl, an extinct flying reptile.

According to Lucille Muchmore, however, the oversize birds seen in the Big Bend area all have feathers. Muchmore is a retired registered nurse and a correspondent for the Alpine Avalanche newspaper. She reported details of a recent sighting near the remote mining ghost town of Terlingua close to the Texas-Mexico border.

Big Bend resident Lorraine Jeanes told Muchmore that she saw a bird about three feet tall with a six-foot wingspan standing in the road. Another witness described a creature that "looked like a penguin." Muchmore has been collecting "Big Bird" reports since she began writing for the newspaper four years ago. She insists that the people who report are "reliable people," not given to wild story-telling; "they're serious about it," she says.

Al Schriver, a biologist with the Laguna-Atascosa Wildlife Refuge near the Texas coast, said he and other biologists "have kinda kicked around" the reports. "I don't doubt that these people are seeing something, but what they're seeing remains to be determined."

SOURCE: *Daily Texan,* Austin, Tex., 11/17/83. CREDIT: K. Neidigh.

Flipped-Out Vultures

Another strange bird story emerged in Florida as winter residents began returning home following vacations in cooler northern climes. Among the returnees were Jeffrey and Elyse Valcante of Punta Gorda. They liked everything about the house they had purchased only six months before — everything, that is, except the vultures. A band of about 40 of the stinkers had selected the Valcante residence as their home, for no apparent reason. In sporadic forays, they would swoop down, claw at the roof, rock the television antenna, peck at windows and doors, and depart only when Valcante or his wife threw stones at them.

As summer approached and the weather turned from warm to hot, the attacks subsided and the couple left for vacation in a carefree mood.

But when they returned home, they found their almost-new screened enclosure reduced to shambles. Valcante said he at first "thought a storm had come through the area." But the "horrendous smell" and information from a neighbor tipped Valcante that his home had been beseiged by the flock while he was away.

Patrolman Paul Jackomin of the Punta Gorda police reported that the winged vandals "caused $400 worth of damage by pecking at the screens and removing entire panels of screening from the enclosure." About 15 vultures seemed to be standing watch in the area when he completed his investigation, Jackomin said.

The problem was duly passed along to the Florida Game and Fresh Water Fish Commission. Officer Paul Blanchard said he hadn't heard of anything so perplexing since a pack of vultures pecked the stuffing out of boat seats hung out to dry in a marina about ten years before. That problem, he recalled, was handled by setting out live traps with spoiled meat for the vultures to peck at. "But that was in an area where they had the manpower to do it," he said. "It might work here ... but I just don't know what we're going to do."

SOURCE: AP in *Asbury Park Press,* 9/25/83. CREDIT: Member #432.

Fatal Mistake

Asked what he knew about a woman's skull unearthed by peat-diggers in a bog 300 yards from his home in Chester, England, Peter Reyn-Bardt startled detectives by confessing to the murder of his wife 22 years ago. The skull, however, was not that of the murdered wife; scientific examination showed that it

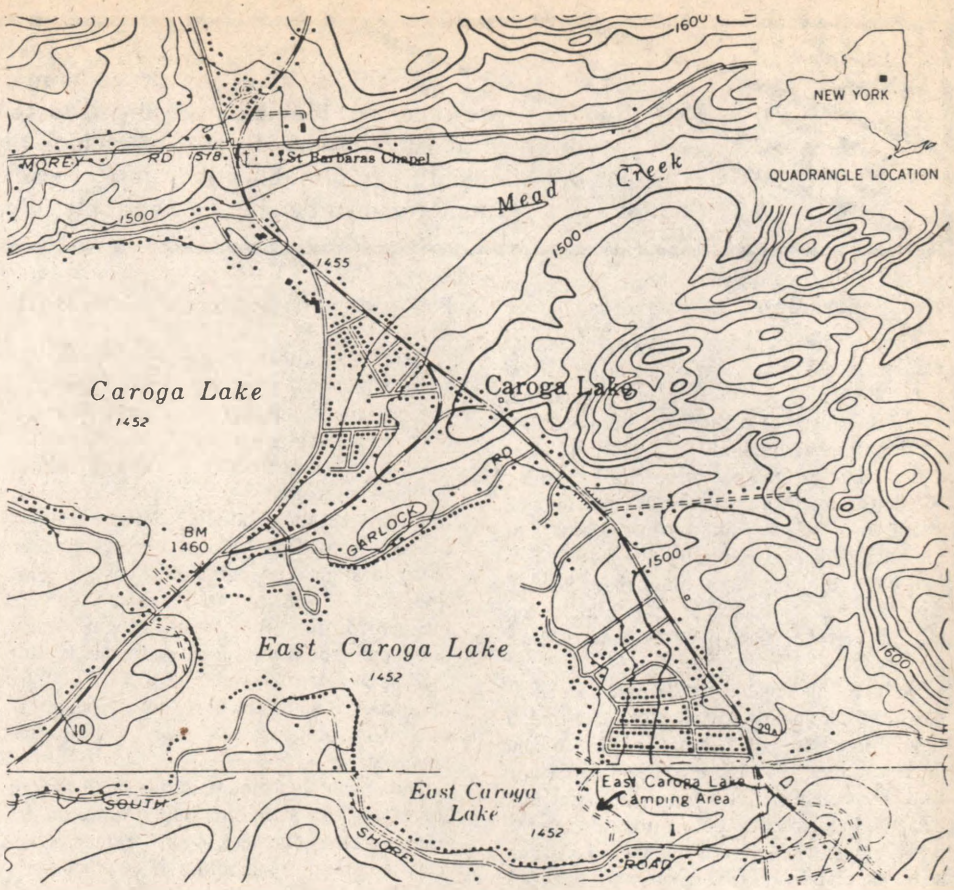
belonged to a woman who had been dead for more than 16 centuries. "But the supreme irony is this: Its discovery led directly to the arrest of the defendant and to his detailed confession," the prosecutor told the trial jury.

Reyn-Bardt, a 57-year-old former airline employee who is now out of work, has since revoked his confession and hopes to win a verdict of manslaughter instead of murder for which British law now prescribes a maximum sentence of life imprisonment.

Giving evidence at his trial, Reyn-Bardt said that one day in June 1961, his estranged wife, Malika, came to the cottage he was sharing with another man. He recalled that at first he and his wife chatted amicably, but when the discussion turned to money, she threatened to expose his homosexuality unless he gave her more than he could afford. She then lunged at his face with her long fingernails. He grabbed her shoulders and did not realize he had killed her until he stopped shaking her. "I was terrified and could not think clearly. The only thing that came to mind was to hide her," he told the court.

Responding to questions based on his confession, Reyn-Bardt said he cut his wife's legs, arms and head from her torso with an ax and buried the parts in a drainage trench on the edge of the peat-bog near his home — the same bog in which the ancient woman's skull had been so well preserved that some of the hair and one eyeball were still intact.

SOURCE: AP in *Asbury Park Press*, 12/18/83. CREDIT: Member #432.



The Caroga Lakes in upstate New York. Sightings were reported from camping area.

Capitol Punishment

Over the years, oral history and local legend have told of strange happenings during predawn hours at the state capitol building in Albany, New York. There have been reports of fleeing specters, slamming doors and a variety of "bumps in the night," but such nocturnal activity has been noted only on the fifth floor of the 100-year-old building.

The identity of the fifth-floor ghost varies with the telling of the tale, and the heritage of the building allows an impressive choice:

—Cormack Williams, a construction foreman, was on a scaffold inspecting work being done high above the Assembly floor when he plunged to his death in 1877.

—One year later, a noted American artist, William Morris Hunt, completed some dramatic murals on the Assembly chamber ceiling. His work was highly praised and Hunt felt assured of a lifetime appointment as "capitol artist in residence." But the appointment never came through. Hunt grew increasingly despondent and a move to Massachusetts failed to assuage his bitterness. He committed suicide in 1879.

—Samuel Abbot, a night watchman, died in the 1911 fire that gutted the capitol library rooms. He was the only casualty of that fire.

Ghost-stalkers, however, are always more enthusiastic than those who merely recount the tales. This year's candidate for a stalker-of-the-year award was Norman Gauthier, a psychic research from Manchester, New Hampshire. He was granted permission to monitor the noises and detect a possible ghost. He set up recording equipment on the fifth floor, placing the microphone on a table along with a vase of fresh-cut flowers and a small dish of incense. "When I stay overnight with my recording equipment I'm about 35 percent successful in picking up sounds that do not emanate from our dimension," said Gauthier in a press preview.

Alas for the capitol's ghost-fanciers, Gauthier drew a blank. During seven overnight hours spent inside the building, the researcher heard nothing, saw nothing, and his equipment recorded nothing that could possibly be evidence of a haunting. "This is one of my failures," he admitted.

A few ghost aficionados, however, thought that the experience should be viewed as a success for the ghost rather than a failure of the stalker. Once again, the mysterious entity had demonstrated its skills of avoidance and elusiveness, just as it had done a few years back, when a television crew guided by a local psychic was stationed overnight on the fifth floor. All they saw were the flickering shadows of distant car lights, and all they heard was an occasional cough or shuffling of feet — nearby and unmistakably their own.

SOURCE: *Schenectady* (N.Y.) *Gazette*, 10/18 and AP in Glens Falls, N.Y. *Post Star*, 10/24/83. CREDIT: J. Zarzynski.

Was It a Fish, or . . . ?

Subject: Sighting of an unusual object.

Location: East shore of East Caroga Lake, Fulton County, New York.

Description: Many and varied, i.e., 40 inches to 40 feet. "Long and snakish looking" and "very shiny, wet-like and dark brown." Two protuberances sticking out of the water about 25 to 30 inches apart. Dark gray. The same color as the lake. Possibly a large muskellunge or northern pike.

Sighting Conditions: Early evening (between 6 p.m. and 7:30 p.m. sporadically). Sun was setting, no appreciable wind, lake was calm. Weather was warm.

Number of Witnesses: 16 to 20, mostly adults.

Alerted to the possibility of a sighting of an unusual object in a local lake, I retrieved my preliminary information from an article published in the Leader Herald newspaper of Gloversville, New York, and then began to make some inquiries into the matter. I contacted Lewis Decker, the Caroga Lake campsite superintendent. Mr. Decker said that he was on duty alone, at the registration desk, when a group of children approached him and said that there had possibly been a capsizing of a boat, and a man was floundering approximately 150 to 200 feet offshore. Unwilling to leave his post unattended, Decker remained there — knowing that a number of able-bodied people were down on the beach and could render assistance if needed. After a short

time a number of adults arrived at the gatehouse with three additional reports of an object "churning up the water."

At this point, Decker thought it best to go to the scene. From the beach, he saw only slow waves and a motorboat pulling a waterskier on the opposite side of the lake. There was no noticeable wind at the time. Decker then called New York State Environmental Conservation Officer Larry Johnson; the Fulton County Sheriff's Office navigation patrol was also notified. Arriving on the scene, Johnson did not observe anything unusual, but offered a few plausible explanations. The FCSO navigation patrol arrived about one hour after the initial sighting, but reported no unusual observations.

Three people reported observations to the local press. One gentleman, according to Decker, was quite vocal at the scene as well as to the media. Decker stated that this individual began to lead the group (of 16 to 20 people) by screaming and repeatedly trying to convince bystanders that they were seeing what he was allegedly observing. Decker believes that the same man could be held responsible for the subsequent reports that followed the initial sighting that evening. (The subsequent reports were all made within a 60- to 90-minute time span after the initial sighting.) Decker stated that almost everyone came up with a different description (initially) of what they were observing, but he does believe that the "leader's" induced hysteria did have some effect on some observers.

I was unable to contact witness Clyde Lawton of Gloversville, N.Y. Ivan Duesler, 80, of Ephratah, N.Y., was another witness to the sighting. Unfortunately, I was unable to contact him immediately after the sighting. More than a week later, he stated that he had seen two protrusions from the water, approximately 25 to 30 inches apart. Duesler indicated that because of the distance involved his estimates of size could be smaller than he observed. He further stated that the protrusions were of the same color as the lake, i.e., a dark gray. The total sighting time for Duesler was approximately 15 to 20 minutes. During that time, he said, the object would submerge and then re-emerge in another area. He estimated the direction of travel to be westerly and the distance of travel about 200 to 250 feet. Duesler's opinion is that the sighting may have been caused by a large northern pike or a muskellunge. He has caught such fish during his many years as a fisherman. He said that there were a lot of stories circulating regarding the "creature's" size and appearance.

Officer Johnson said that he had no knowledge of any muskellunge existing in East Caroga Lake, or Caroga Lake, since his department had not put them there. He theorized, that because of the position of the sun on the water at the time, observers may have seen the reflection of submerged weed beds. Waves from a boat in the area at the time may have added to the effect. (Duesler saw no boat during the time of his sighting).

Regarding the fish explanation, both northern pike and muskellunge grow to a great size and could easily survive in the Caroga Lakes. Muskellunge can grow to a length of 7′ 4″ and can weigh as much as 110 lbs. Generally needing a lot of room, many do still live in smaller inland lakes. Lewis Decker said that he has seen exceptionally large fish taken from Caroga Lake this season, indicating that an 18″ pickerel, large splake and a 21″ large-mouth bass were caught.

Whatever the nature of the sighted object, most of the observers maintain that there was definitely something tangible in the water. East Caroga Lake is small and slightly more than 50 feet deep. Its larger sister, Lake Caroga, is about 75 feet deep in some places.

If the sightings continued, I planned to scuba dive in East Caroga in an attempt to locate and photograph the cause of the sightings, or at least to secure some water samples. However, with the exception of some scuba-diving hoaxers pushing inner-tubes partially above the water, to my knowledge no other incidents have been reported. Sixteen people, however, continue to believe that "something" was out there on the water on Tuesday evening, August 30, 1983.

—Dan L. Lowenski

Meetings Ahead

July 7 — American Society of Dowsers Fifth Annual West Coast Conference, at Porter College, University of California, Santa Cruz. For information, contact Mary Marie Satterlee,6062 Montgomery Bend, San Jose, CA 95135; phone 408—238-1188.

July 18-21 — The Rocky Mountain Conference on UFO Investigation, University of Wyoming (5th Contactee Conference). For information, contact Dr. R. Leo Sprinkle, institute for UFO Contactee Studies (IFUFOCS), 1425 Steele St., Laramie, WY 82070; phone 307—745-7897.

Buck Stop

The early morning quiet of a suburban subdivision was shattered when a wild deer crashed through a plate-glass door at Joseph Krasznai's home in Clayton, Missouri. Krasznai and his family watched in amazement as the animal went on a rampage, ripping curtains, banging its antlers on bookcases, and stumbling on the floor.

"You just can't imagine what it was like," said Nancy Krasznai, "to be in bed, to hear all that noise and then to get up and go in and see that big animal down on all fours, trying to get up after he slipped on the area rug."

Police reported that the deer probably wandered from a wooded area behind the subdivision and was near the Krasznais' back porch when it was startled by the barking of a neighborhood dog. The frightened buck bolted through a sliding glass door leading to the family room, and all five family members, who were "a little more shocked than anything," jumped out of their beds and watched the deer create havoc for several minutes until it exited through the shattered door.

Apparently the deer suffered cuts from the broken glass, but attempts to follow the trail of blood to locate the wounded animal were foiled when it ran into a creek.

SOURCE: AP in *Asbury Park Press*, 10/9/83
CREDIT: Member #432.

A Very Lucky Turtle

A turtle placed in the foundation of a house for good luck survived there for more than 50 years without food or water, The China Daily newspaper has reported.

Factory worker Lin Zhongsheng, who lives in the northeast city of Shenyang, discovered the dark brown turtle in a rotten wood box when he was digging a drain under his home, built around 1931 — a time when "it was believed a living turtle could protect the foundation of a house," the newspaper said.

After Mr. Lin removed the turtle, it crawled around his living room. Experts examined the reptile and found it had a slow metabolism and had not grown during its dormancy in the low temperatures underground.

SOURCE: AP in *The Sun*, Baltimore, Md., 11/20/83.
CREDIT: H. Hollander.

Shroud in a Time-Warp?

For much of his stay in the hospital, the room occupied by William McDonough was jammed with people wanting to see what he claimed was the image of Christ on the closet door.

Officials at St. Peter's Hospital in Albany, N.Y., said they had to limit the number of people entering the facility because of the crowds that turned up to gaze at the oak door. McDonough said about 500 people stopped by to look at the door, and said, "many touched it on the way out."

McDonough said he discovered the image while in the hospital for treatment of an infected foot. He claimed the image resembled that in the Shroud of Turin, discovered in Italy in 1578.

SOURCE: *St. Louis* (Mo.) *Post-Dispatch*, 11/13/83.
CREDIT: R. Nelke.

20,000-Year-Old Skull

Archeologists unearthed a piece of human skull more than 20,000 years old at a site in China's northern Heilongjiang province, the official Xinhua news agency reported.

Stone tools and more than 20 species of animal fossils —including mammoth, rhinoceros, wild ox and horse — were also discovered at Yanjiagang, a cultural site of the early Stone Age.

SOURCE: UPI in *The Tennessean*, 12/15/83.
CREDIT: H. Holland.

Books Reviewed

THE EVIDENCE FOR BIGFOOT AND OTHER MAN-BEASTS by Janet and Colin Bord (The Aquarian Press, Wellingborough, Northamptonshire NN8 2RQ, England, 1984, 160 pp., illus., +2.50)

Reviewed by Sabina Warren Sanderson

This book is one of a series being published by ASSAP (Association for the Scientific Study of Anomalous Phenomena) in England. If it is representative of the series — and I see no reason to assume that it isn't — ASSAP is certainly to be commended. It does indeed provide "a comprehensive, impartial and up-to-date assessment of the evidence" for ABSMs around the world, as claimed in the publisher's note.

The first three chapters present a concise summary of reports of hairy man-like creatures by regions: North America; the Himalayas and USSR; and China, Australia, Southeast Asia, Africa and South America. Of particular interest and value are the reports from China and Australia, most of them dating from the 1970s, though some earlier cases from Australia came to light as a result of the publication of current sightings. Passing mention is also made of reports from Japan and the Arctic (the Toonijuk) and of rumors from New Zealand.

Chapter 4 provides an excellent survey of material evidence — footprints and tracks, excrement and hair samples, photographic evidence, and vocalizations — and behavior patterns, including diet.

The weird reports are covered in Chapter 5, "Non-Physical Bigfoot and the UFO link," which steers a neat course straight down the middle, being neither sensationalist nor self-consciously sceptical.

The final chapter, "Searching for Answers," summarizes possible identifications, all the way from the occasional hoax through prehistoric survivals (e.g. *Gigantopithecus* and Neanderthal Man) to possible "psychic" phenomena. They conclude that "It would need a total disregard for man's powers of observation and honesty before one could throw out the complete body of firsthand witness accounts. We also have the footprints, hairs, faeces, and Roger Patterson's cine film, all soft evidence but nevertheless difficult to discard except by a total sceptic with a complete incapacity for new ideas. We believe that the evidence speaks for itself, in a voice too loud to be ignored for much longer."

The book is fully annotated (there are about twelve pages of Notes), and includes an excellent bibliography and a good index.

I recommend the book most highly, particularly as an introduction to the subject, but also as an addition to any Fortean library in that it contains material not readily available elsewhere.

MYSTERIOUS AMERICA by Loren Coleman (Faber & Faber, Inc., Winchester, Mass., 1983, 301 pp., illus., paperback, $9.95)

Reviewed by Sabina Warren Sanderson

It is not clear to me what the author intended by this book. In the opening chapter it is implied that it is a kind of Fortean tourist guide, which for the most part it isn't. (For all practical purposes it simply ignores geological and archaeological oddities, which do have the advantage of being there whenever one wants to visit them.) Neither is it primarily an account of his on-the-spot investigations, many of the items being culled from newspapers, some of them published long before Mr. Coleman was born. There is nothing wrong with this, but the book is probably best looked upon as a general reference work, less helpful to 'tourists' than Mr. Coleman presumably intended.

Chapter 1 does list a number of books and journals useful as sources of information on Fortean sites and events (with a curious omission I will come back to later), and Chapters 2 through 4 constitute a kind of grab-bag, discussing in varying detail a wide variety of unexplaineds.

The major part of the book is entitled "Creatures Aplenty" and deals with everything from the "Dover (Mass.) Demon," a small gnomelike creature, to phantom panthers and the Jersey Devil. Much of the material will be old-hat to seasoned Forteans but will undoubtedly interest those new to the field. I must admit that I was a bit glassy-eyed by the time I finished the chapter on kangaroos — a seed catalogue if there ever was one; it would have been better to report a few representative cases and relegate the remainder of the reports to an appendix as was done with alligators, for example.

There is some curious duplication and a species of schizophrenia apparent here as well. For example, 'Nellie the Lion' is included in the chapter on phantom panthers and in that on maned mystery cats; and the author in one chapter suggests that phantom 'panthers' are just that — phantoms — though they leave tracks and occasionally other traces, and then in the chapter on maned cats suggests that both are real animals, the females and the males, respectively, of a surviving population of *Panthera leo atrox*, the giant American lion of the Pleistocene. (Incidentally, I question his statement that pumas "do not prowl during the day.")

Included in this section is a chapter on "The North American Ape," in my opinion the best in the book, in which Coleman makes a very good case for an *ape* population in North America, either imported along with slaves from Africa or, more likely, indigenous.

The third section, "Phantoms Afield," includes one UFO occupant case; the 'Mad Gasser of Mattoon' and his 'kin'; phantom clowns (a rather sinister bunch); and the 'Wandering Nephites,' bearded gentlemen apparently connected with both the Mormon Church and the legend of the Wandering Jew. The latter two may be new to many Forteans, but in neither case is there sufficient evidence to permit any definitive classification; i.e. the clowns may be a case of copy-cat pathological behavior, particularly in view of the appalling number of children kidnapped in this country every year.

The final section of the text is called "Fireside Thinking" and includes two chapters: "The Name Game," an intriguing discussion of names of persons and places connected with Fortean phenomena (Warren is one of them, by the way); and "Some Concluding Thoughts After Some Years on the Trail." Here I simply must put the record straight.

It is perhaps a quibble on my part, but I should have said that Loren Coleman had been corresponding with Ivan Sanderson, rather than the other way round as Coleman has it, this if only because Ivan's first Fortean articles were published in the mid-1940s, whereas Coleman's "first article of note" was

published in 1971. Not a quibble is the fact that Mr. Coleman implies that he was personally responsible for the founding of "the Ivan T. Sanderson Foundation ... soon to be followed by his Society for the Investigation of the Unexplained." This is not true. In the first place, there has been only one organization, which changed its name at Ivan's insistence. In the second place, Ivan would never have founded the Society at all if it had not been for the late Walter J. McGraw who was concerned for the safety and preservation of Ivan's even then (1965) voluminous files and more or less bludgeoned Ivan into agreeing to a formal organization.

Mr. Coleman did indeed contribute to SITU but he received a great deal of help *from* it as well. It is therefore very unkind of him to omit any mention of SITU and/or *Pursuit* in his list of sources of information. I can only guess at his motives for so doing.

There are five appendices but their usefulness varies. Those on 'spook lights' and lake and river monsters will be quite helpful to 'tourists'; "Erratic Crocodilians and Teleporting 'Gators" is of historical interest; that on phantom ships rather frustrating, e.g. one is reported to appear "every seven years" with no indication of the year, and many others are followed by a question mark under "when seen." "A Few Bedeviled Places" lists things by state and county only, which is not terribly helpful. There is a fairly extensive regional bibliography which is an asset but, alas, there is no index.

Lastly, I have to say that my major complaint about this book is Mr. Coleman's English. I have a sneaking suspicion that he is trying, either consciously or unconsciously, to imitate Charles Fort's style. Unfortunately he fails, and the result is sometimes pretentious, sometimes awkward, and sometimes just plain ungrammatical. Try wrapping your teeth around the following:

"Often are the times when our thoughts turn to moving, weekend treks, taking vacations, going on holiday, and visiting family and friends in other parts of the country. If your thoughts also have a Fortean bent to them, if you mix your pleasure with furthering your own personal inquiries into the unexplained wonders around you, then some helpful hints toward making your next trip a worthwhile phenomenological investigative adventure might interest you."

Or take "But the whole subject of melanistic or black felines is shrouded in mysterious happenings." I'm sorry, but one cannot shroud anything in a happening, mysterious or otherwise. Coleman also consistently, and irritatingly, misuses the word 'would' — e.g. "A year before Nebraska's flap, strangeness would settle in Minnesota..." (I don't believe strangeness can settle anywhere, but...) In addition, the proofreading is erratic (I assume that on p. 179 the reference should be to Downingtown, Pa., not 'Dowington.').

Despite my various caveats, *Mysterious America* is worth adding to a Fortean library, though the 'helpful hints' that Coleman alludes to will probably not be terribly helpful to the novice investigator. They are fine up to a point but do not go far enough. He says nothing, for example, on how to get in touch with witnesses, leaving me with a vision of some poor bloke barging in unannounced and being thrown out bodily. This has been known to happen.

TALES OF THE UNCANNY, selected by the editors of Reader's Digest (Reader's Digest Ass'n., Pleasantville, New York, 1983, 606 pp., $14.95)

Reviewed by Paul Thompson

This eclectic volume contains seven stories of true mysteries by seven famous authors. Although somewhat lightweight as such collections usually are, *Tales of the Uncanny* is nonetheless a "good read."

Robert Bloch starts the book with a skin-crawling account of H.H. Holmes, America's most insidious multiple murderer. Sallying forth from his massive castle in urban Chicago, Holmes killed and plundered unknown scores of victims in the 1880s and 90s.

In a contrasting and more Fortean vein are John G. Fuller's condensed version of the CE III experience of Barney and Betty Hill, and Norah Lofts' story about the demon-possessed nuns of Loudon (ca. 1638). Next comes Julian Symons' rather gushy account of the career of D.D. Home, the medium; I continue to read how Home was never caught cheating during his seances, but this does not reassure me as I mull over the complete lack of scientific controls imposed.

Although it happened more than fifty years ago, the fiery crash of the British airship R-101 remains a seemingly inexhaustible subject for further discussion. The fifth section of *Tales* is given over to David Beaty's examination of the tragedy, with the usual emphasis on the spiritualistic claims of warnings and explanations by dead British airmen. (For a fuller account of the R-101, see *The Airmen Who Would Not Die.)*

Gothic novelist Barbara Michaels puts her literary skills to work, telling the story of the Stratford poltergeist case of 1850 in the style of a first-person memoir. Michaels' narrative is well-placed as the sixth in this story collection since it provides a nice change of pace from the documentary style of the previous portions of the book. But the Stratford story seems oddly flat when we compare it to such spectacular fictional entertainment as Spielberg's "Poltergeist."

The final section of *Tales of the Uncanny* belongs to Colin Wilson's "novelization" of the life and death of Rasputin. The strong mental powers of the peasant *starets* are noteworthy, but calling them "uncanny" is a little too much.

This book does not seem to me to be a "must buy" for serious Forteans, historians or occultists. As with most mass-market collections (like World Almanac's *Book of the Strange*), the emphasis is on creepy, offbeat yarns. This is fine; it may attract new minds to Fortean insight. But considering the price and contents, *Tales* is best recommended for libraries and coffee tables.

Now wouldn't it be great if we could get such good writers to tackle some deeper, more obscure mysteries?

EARTHQUAKES, TIDES, UNIDENTIFIED SOUNDS AND RELATED PHENOMENA (A Catalog of Geophysical Anomalies), compiled by William R. Corliss, The Sourcebook Project, Glen Arm, Maryland 21057, 1983, 214 pp., $12.95 postpaid)

Reviewed by Robert Barrow

"A mystery," the American lecturer Joseph Cook once explained, "is something of which we know that it is, though we do not know how it is." In his own time, this is knowledge of which the eminent Charles Fort appeared acutely and mischievously aware; writer Fort's keen eye for the unusual perceived that there is no mystery like a scientific mystery, for the event of an expert in confrontation with something he cannot explain is an outrage to the logical mind *and* nothing short of a cause for celebration to the observer who prefers to believe in a disorderly universe. *(Continued on page 191)*

The Notes of Charles Fort

Deciphered by Carl J. Pabst

ABBREVIATIONS

(*DA)	library call letters
ab	about
Ac to	According to
(Al)	[?Almanac?]
Amer	*New York American*
Am J. Sci	*American Journal of Science*
An Reg	*Annual Register*
ap.	appearance
Arc Sci	*Arcana of Science*
Astro Reg	*Astronomical Register*
attrib	attributed
BA	*Report of the British Association for the Advancement of Science*
BCF	*The Books of Charles Fort*
bet	between
Bib. Univ	*Bibliographie Universelle*
B.M.	British Museum [?]
BO	"It is clear from the arrangement of the notes that he [Fort] was searching his chronological arrangement and plucking out specific notes for a future book in which he would refer to these data as opprobrious to the Scientists for their *odor*, 'B O'," (*The Fortean*, #3, p. 14, c. 1)
Bombay Geog. Soc (L)	*Transactions of the Bombay Geographical Society* (L[?])
Bull Seis Soc. Amer	*Bulletin of the Seismographic Society of America*
Cel. Objs.	*Celestial Objects*
Clinton Co., Tenn	Clinton County, Tennessee
Cor	Correspondent
C.R.	*Comptes Rendus*
D-62	*The Book of the Damned*, page 62
Deb.	*Journal des Debats*
det. met.	detonating meteor
dets.	detonations
dist. artillery	distant artillery
Dr W	Doctor Wartmann
ext. light	extraordinary light
F.	*Fletcher's List*
F. ball	Fireball
Finley's Rept.	*Finley's Report*
(Fr)	France
Gents Mag	*Gentleman's Magazine*
Greg's Cat of Meteors	*Greg's Catalogues of Meteors*
G's Island	Graham's Island
Inf conjunction	Inferior conjunction
It Sounds	Italian Sounds
Jour des Deb.	*Journal des Debats*
Jour F Inst	*Journal of the Franklin Institute*
Kingston, Miss	Kingston, Mississippi
L--	[?]
La Nat	*La Nature*
La Sci Pour Tous	*La Science Pour Tous*
Lbs	pounds
Loc. Met	Locus [?] of Meteors
LT	London *Times*
Mag of Nat. Hist	*Magazine of Natural History*
Mag. Pop Sci (P)	*Magazine of Popular Science* (P[?])
Metite	Meteorite
Met Mag	*Meteorological Magazine*
met train	meteor train
M Notices	*Monthly Notices of the Royal Astronomical Society*
Mts	Mountains
N.M.	No More
N or N.W.	North of Northwest
N. Reg	*Niles' Weekly Register*
NS	New Series
N.Y.	New York
ob.	observation
Obs.	*Observatory*
O h	[?]
Op Mars	Opposition of Mars
p.	page
phe.	phenomena
Phil Trans.	*Philosophical Transactions*
Polt	Poltergeist
q's	earthquakes
R.A.	Right Ascension
Rec Sci	*Recreative Science*
Rept B.A.	*Report of the British Association for the Advancement of Science*
/// [Reverse side]	probably not related
Sch	Schomburgk
Sound phe	Sound phenomena
spon. gen.	spontaneous generation
sul-fog	sulphurous fog
Switz	Switzerland
vol.	volume
volc	volcano
W. Indies	West Indies
wld	wild
YB	*Year Book of Facts*
YRA	library call letters

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(Continued from Pursuit No. 63, Third Quarter 1983, page 144)

1832

Nov. / Biela's Comet / M. Damoiseau in the "Connaissance" for 1980, and Mr. Henderson in the supplement to the Nautical Almana[c] for 1830, both computing from the same elements, [Reverse side] disagreed for position on Nov. 2, 1832, by 38 degrees R.A. -- for Nov. 28, by 58 degrees. / LT, Oct 12-3-a, 1832 / For title of Connaissance, see Aug 30, 1905.

Nov. 1 / Spiders / Mouth of the Plata / Darwin's ob. upon patches of [Reverse side] web, and a vast number of little spiders / Jour of the Voyage of the Beagle, p. 187.

Nov 11 - 12 / Near Limoges / great mets / C.R. 5-563 / from 11 p.m. till 4 a.m.

Nov. 12 / 8 p.m. / at Mauritius / Sky overcast to 3 a.m., 13th. Then in all parts of the sky great numbers of meteors -- so [Reverse side] many impossible to count them (C.R. 5-121) -- their trains not straight lines as ordinarily, but all kinds of curves. Maximum 4 a.m. and lasted till sunrise. [Front side] No radiant mentioned except that greatest numbers were some degrees south of the zenith.

Nov 12 / No meteors noted by Ross for month of November. / Ross, "Second
[Reverse side] Voyage of Discovery."

Nov. 12 / About 50 meteors / Essex / Arcana of Sci 1833/268.

Nov. 12 / in Essex / Forty-eight meteors counted in a few minutes. / [Reverse side] Arcana of Science 1833/268.

Nov. 12 - 13 / Loc. Met / Capt. Bernard, at sea, off Carthagena, for at least three hours
[Reverse side] saw shooting stars at a rate of 2 per minute, many of them of extraordinary size, leaving trains of iridescent light. / It is said that same night a shower was seen in Ohio. /
[Front side] Mag Pop. Sci 3-62 / Greg's Cat of Meteors, BA 54, nothing for this night.

Nov. 13 / Ac to M. Arago, quoted in Mag. Pop Sci (P) 3/62, Nov. 13, 1832, tremendous flow
[Reverse side] meets at Orenburg, Russia, from between 3 [and] 4 until sunrise.

Nov. 13 / See before. / June 23 / Delhi, India / 3 balls of fire rose from horizon and united and
[Reverse side] passed away. / Bombay Geog. Soc (L) 9/199.

Nov 13 / morning / Innumerable meteors / Bulrampore and Agra, India / Trans Bombay Geog Soc 9/199.

Nov 14 / Bruneck, in the Tyrol / An Reg. 1832 (p. 444) / Ab 6 in morning -- stream of light from zenith nearly to ground -- drew back gradually
[Reverse side] and stretched out toward north -- it turned wavy and turned to white cloud [t]hat was stationary in [t]he sky until daybreak. Weather clear. Vivid illumination.

[Nov] / q's / time of mets.

Nov. 13 / Zeiz, Saxony / a shock. / In Dessau, in evening, a thick yellowish fog with a
[Reverse side] perceptible odor. / BA 54.

(Nov 13) / q and sulphurous fog / Zeiz, Saxony / a q // at Dessau / the sul-fog // Etna in eruption / BA, 54.

Nov 13 / morning / Bulrampore, India / "Innumerable meteors, flying in all directions. / BA 50-121.

Nov 14 / The stream of light that descended and then became a beam at Bruneck
[Reverse side] in the Tyrol. / Also unusual number of meteors. / An Reg 1832-44.

Nov 13 / Meteors / Upon Nov. 13, 1832, enormous display in Red Sea, off Mocha, by Capt. Hammond of "Restitution" -- from 1 a.m. until daylight. /
[Reverse side] Nature 53/7.

Nov 13 / Began bet 3 and 4 a.m., at Orenburg, Russia (C.R., 2-513), a multitude of meteors from N.E. to S.W.
[Reverse side] Maximum between 5 and 6 a.m. Observation by a priest that interior of a church at times suddenly lighted by them.

Nov. 14 / ab. midnight / Meteors like brilliant fireworks all over south of England, and
[Reverse side] many parts of Continent -- a q in Bermuda -- eruption of Etna. / Rev. W. B. Clarke / Mag. Nat Hist 7-293.

Nov. 19 / or ab 12:30 (on 20) // at Darlington / Until 3 or 4 in morning -- ab. 25 meteors in first half hour. From the west. / "sublime spectacle" / LT 23-1-f.

Nov. 20 / Op Mars / (A1).

Nov. 24 / Shock on and around Etna preceded and followed by heavy rain. / BA 54.

Dec / Vesuvius / from Oct 31 to ///
[Reverse side] -- Comrie / L -- / Ice, July 11.

Dec 3 / 8:15 a.m. / Waterspout / Lake Leman, Switz / Arc. Sci 1834-267.

Dec 13 / Great met / 6 p.m. / S. Herefordshire / BA 52-182.

Dec 16 - 24 / Vesuvius / BA 34/235 / Bib. Univ 52-351.

Dec 19 / Fireball / England / BA 60.

Dec 19 / [LT], 3-c / Shower of fire in France.

Dec 20 / Vesuvius / alarming / Niles Register, March 2, 1833.

Dec 20 / Fireball / Bonn / BA 60.

Dec 28/ -- 11 p.m. / Dec 29 -- 7 a.m. / Dec. 30 -- 8 a.m. // q / Swansea / LT, Jan 9, 1833, said that sound was terrific. /
[Reverse side] B Assoc '54-23.

(Dec 29 / Penllergare, Wales, 7 a.m. -- q) / 30th -- 8:30 -- q and loud noise / and at Swansea, 28, 11 p.m. // L. W. Dillwyn,
[Reverse side] Contributions towards a History of Swansea, p. 53.

Dec 30 / 8:20 p.m. / Swansea, Wales / q's preceded by sounds like dist. artillery / BA 54.

Dec. 30 / 8:20 p.m. / 4 shocks preceded by noise like distan[t] firing of heavy artillery / (Swansea) / Roper, p. 32 /
[Reverse side] Gentleman's Mag 102/2/640 / Spectator, Jan 12, '33.

1833

1833 / Nachraschinsk, Russia / Stones with hail / Met Mag 17/151, quoting P. W. Schwidoff / See 1844.

1833, etc. / These quotations from Mag Nat Hist are by paper by Rev. W. B. Clarke,
[Reverse side] showing relations between qs, volcs and meteoric and meteorological phe.

1833 / On Danube, red rain said be due to small quantity of protoxyde of iron. / La Nat 1898/2/316.

1833 / Indians of California wiped out by a plague. / N.Y. *Times*, 1874, Oct 22-5-5.

[BCF, p. 381 / See 1927//.]

Jan 2 / (LT], 2-e / 9-4-a / Swansea // 25-4-c / Carmarthen.

Jan 14 / ab 10:30 a.m. / Saxony / shock and sound like dist. thunder / BA 54.

Jan 15 / [LT], 4-c / Vesuvius.

Feb 19 / Antipodes / q. at 22°N; 79°W./ same time, a ship at 22°S; 79 E in a hurricane / Mag. Nat. Hist. 6-307.

March 18 / Detonating meteor / Madras / BA 60.

March 24 / 9:15 p.m. / Parma / shock preceded by a gust of wind / BA 54.

April 11 / afternoon / Springfield, Ohio / Tornado / Finley's Rept.

Ap 12 / [LT], 2-c / Horsham / q.

Ap. 19 / Nuremberg and Prague / Fireball / BA 60.

May / Atrocities in Rosshire. / L.T., June 6-2-d, quoting Caledonian
[Reverse side] Mercury. / Attributed to lawless ruffians. Said that 2 horses were flayed alive.

ab. 6 months / Baldoon, on river St. Clair, Canada / Polt / home of a farmer /
[Reverse side] Medium and Daybreak 6-551.

May 2 / Sheep fold this night entered by two dogs. (near Bristol). 26 killed. / L.T. 15-3-f /
[Reverse side] 36 severely wounded. As to dogs not even said were seen -- "The dogs were sporting dogs."

May 3 / LT of /Animal / That there was excitement in the village of Coulsdon, Surrey. Two sheep had been killed and "an animal of strange and unnatural appearance" had been seen. According to reports "it is
[Reverse side] something of the dog or wolf species, but all agree that they never saw the like before." Said that the more rational of the residents thought it something that had escaped from a menagerie. A hunt was organized Ap. 30th, but with no success.

[May 5] / wld Hauser / In Niles Register, Aug 31, 1833, that on May 5th, young man ab 24, able only to stammer a few words, found near Leyden, Holland. Knees were drawn up to breast as if
[Reverse side] he had been bound in that position. One foot decayed to ankle and other quite gone.

May 15 / 20 h / Venus / Inf conjunction (A 1).

May 16 / Futtapoor, India / Fish, dead and dry / D-85 / See May, 1834

[BCF, p. 88:
A fall of fishes at Futtepoor, India, May 16, 1833:
"They were all dead and dry." (Dr. Buist, *Living Age*, 52-186.)]

May 20 / (+) / B.A. '60) / [London *Times*], May 24-4-e / Met at Chichester.

June / Ireland / island as if emerging from sea / Brit Assoc 1852/30.

June 1 / Fakenham / See Oct., 1907.

June 1 / Norfolk Chronicle of, copied in Elliott O'Donnell's "Haunted Places in England", chapter 10. / Haunting of Sydersone Parsonage
[Reverse side] near Fakenham. Groanings and knockings. Other letters to the Chronicle -- rappings usually near the children's beds. // Fakenham / See Oct, 1907.

summer / "A singular insect, there before unknown, ravaged the corn fields in Spain and so poisoned the wheat that
[Reverse side] it could not be eaten." / Mag. Nat. Hist. 1834-196 (vol 7).

July 8 / Near Naples / the rain of oranges / Cosmos 3/4/696.

July 13 / q and th. storm / q at Sutton Ashfield Staffordshire -- on 14th, "one of the
[Reverse side] most frightful thunderstorms ever known there" / Mag. Nat. Hist 7-301.

July 13 / 3:05 p.m. / Mansfield, Warsop, etc. / near Nottingham? / a q / L.T., July 16/6/c.

July 16 / Metite, ac to Baumhauer, at 3:30 p.m. / BA 54 /
[Reverse side] Nachralschinsk, Tobolsk.

Aug 4 / A globe of fire "as large as a carriage wheel broke against a mountain
[Reverse side] in Hungary. / Mag. Nat Hist 7-299.

Aug 10 / Worcestershire / Fireball / BA 60.

[1833 Aug.] / LT Index / 1833 / q / India / Aug. / with phe / See for Nov. meteors.

Aug 12 / Vesuvius / BA 54.

Aug / Tuesday before Aug 30 // Violent q / Virginia / Sun -- 1896, Sept. 9-2-7+.

Aug 26 / Great q / India / Calcutta, etc. / Allahabad / BA '11.

Aug 29 / q and stones / Whole province of Nepal and neighboring parts of India desolated by quakes
[Reverse side] "a few days later," fall of aerolites at Caudahar. / Mag Nat Hist 7-302.

Aug [Last of] Spon comb trees / L.T., Sept 5/3/c / Last of Aug, 1833, in a field near Frant in decayed part of a birch tree. Short time afterward a large ash burst into flames. //
[Reverse side] Sept, 7, a cor argues that doubt because of evident friction of limbs against one another in wind.

[BCF, pp. 148-149:

W. S. Forest, *Historical Sketches of Norfolk, Virginia*:

That, in September, 1833, when some workmen, near Norfolk, were boring for water, a coin was drawn up from a depth of about 30 feet. It was about the size of an English shilling, but oval -- an oval disk, if not a coin. The figures upon it were distinct, and represented "a warrior or hunter and other characters, apparently of Roman origin."

The means of exclusion would probably be -- men digging a hole -- no one else looking: one of them drops a coin into the hole -- as to where he got a strange coin, remarkable in shape even -- that's disregarded. Up comes the coin -- expressions of atonishment from the evil one who had dropped it.

However, the antiquarians have missed this coin. I can find no other mention of it.]

Sept. 1 / Vol. / Goentoes, Java / CR 70-878.

Sept 6 / Great q. / China / BA '11.

Sept 17 / Brighton / Column of light as if down from Milky Way in a clear sky /
[Reverse side] about 50 meteors / Mechanics Magazine 20/25.

Sept 18 / Chicheste[r], England / and great q, Peru.

Sept 18 / Arica and Saena, Peru. / q. / said puffs of wind, that were felt inside buildings as well as outside / BA 54.

Sept 18 / previous evening // "A brilliant aurora with meteors falling." / Edin N. P. 31/120.

Sept. 18 / q / Chichester / preceded by sound of a rushing wind / "On the previous evening a brilliant aurora with meteors falling." / Rept BA '54/240.

Sept 27 / [London *Times*], 3-f / Dublin / Aurora / Curious.

Oct 2 / Wirtemberg / Fireball / BA 60.

Oct 6 / [London *Times*], 1-f / New phe at Vesuvius.

Oct 9 / "Rain of blood (?)" / Cleves and Utrecht / Mag Nat Hist 8-2.

Oct 12 / North Carolina / Tornado / Finley's Rept.

Oct 15 / volc and rain / A tremendous rain upon Etna, pouring down into the river
[Reverse side] Acellaro, which burst its confines, drowing 100 persons. / Mag Nat Hist 7-298 / To be noted that the Italian papers called this rain "unexpected".

Nov.6 / q. / Oxford, Gloucester, Berks and Wilts -- air "filled with a reddish vapor / Mag Nat Hist 8-2.

Nov 11- 12 / At Frederikshaab and at Golhaab (Greenland), a rain of fire toward west.
[Reverse side] "Rain of fire" might been auroral. / C.R. 3-473.

Nov. 12 / Germany / Fireball / BA 60.

Nov 12 / Leonids before due in 33 1/4 period / Nov. 17, 1893.

Nov 12 / Seems maximum local at about 4 a.m. / So from Leo and not earth in a stream.

Nov. 12 / Localized / India / Nov 12, 1847.

(Nov 12) / Aurora and mets / Nov 12 - 13, 1841.

Nov. 12 / See Nov 12, 1838, with Perseids and Quadrantids.

Nov 12 / midnight till daybreak / not said if 12 - 13 / Great number of meteors in Cuba / C.R., 64-232.

Nov. 12 / See Nov 11 - 12, 1828.

Nov 12 / See Nov 12 -13, 1847.

Nov. 12 - 13 / Great met fall in U.S. / Am. J. Sci.

Nov 12 - 13 / Olmstead thinks to west stormy and cloudy and mets not seen.

Nov 12 - 13 / See Geminids plenty, Dec. 12.

Nov 12 / 36 N / 41 W / considerable number but none more than 4 or 5 a minute / 26-143 A. J. Sci.

Nov. 12 / At 9 o'clock, for example, Miss., Ga., S.C., N.Y./ A.J.S. 26-321 / Were attracting attention by 11 p.m. mostly from N.E.

[Nov. 12] / Met stream / 1833, Nov. 12 / Denning, Observatory 20/129 / The display continued 7 hours. /
[Reverse side] Boston, U.S.A. / "The night appears to have been cloudy in England and nothing unusual was seen."

Nov. 12 - 13 / In "Arctic Land Expedition" no mention by Back of meteors.

Nov. 12 - 13 / See at least to 1837.

Nov 13 / rain -- mets -- q's. / concurrent sinking of land (an acre and a half) near Hudson q or trembles of earth near
[Reverse side] Lynchburg, Va -- at Harvard College, a fall of rain without a cloud in the sky / Mag. Nat. Hist. 7-291, quoting Am J. Sci, vol 25.

Nov. 13 / A. J. Sci 25-376 / Bowling Green, Missouri, at 4 a.m. / Hartford, Conn., first noticed on 12th - 13th, midnight. / New Haven, 11 p.m., 12th / N.Y. City, midnight (p. 387) / Richmond, Va., 12:45.
[Reverse side] But seems all agree maximum ab. 4 a.m.

Nov 13 / In the north of Washington, the meteors were truer to radiant point in Leo than in south, ac to
[Reverse side] Prof. Hitchcock. / A. J. Sci 25-395.

Nov 13 / Ac to one cor, a star of rising and falling mag in the radiant point. / A. J. Sci 26-139.

Nov 13/at Emillsburg, Maryland / Fi[r]st at 3 a.m. / A. J. Sci 25-374.

Nov / Leonids / Chichester fog like that of 1832.

Nov 13 / at Lynchburg, Va / Fi[r]st between 2 a.m. and 3 a.m. / A. J. Sci 25-376.

Nov. 13 / Began 3:30 a.m. in Ohio. / A.J.S. 25-376.

Nov. 13 / Augusta, Ga / Mets plentiful from 9 p.m. till the stream. / A.J.S. 25-380.

Nov 13 / Aurora lights seen. / A.J.S. 26-168.

Nov. 13 / 2:40 a.m. / Q at Chichester, Eng., in a fog said been like that
[Reverse side] which accompanied q., Lisbon, 1807 and 1816. / BA 54. /

[Front side] See Sept 18.

Nov. 13 / 8 a.m. / Rain from a cloudless sky at Hartford, Conn. / A. J. Sci 25-398.

Nov / Leonids / Gelat substance / See June 17, 1890.

Nov. 13 / q and fog / Chichester, Dorsetshire / thick fog previous day / Rept BA, 54/241.

Nov. 13 / 3:40 a.m. / Chichester / severe q. and loud rumbling sound // 5:45 a.m. / another, not so severe /// L.T., Nov. 15/2/d.

Nov 13 / For aurora so shifting with stars, see Feb 4, 1872.

Nov. 13 / 4 a.m. / q / Chichester / Mag Nat Hist 7-292.

Nov 13 / A witness's account in N.Y. *Times*, 1879, Nov. 9-2-7.

Nov. 13 / See other mets great.

Nov. 13 / Ship in Lat 51N, Long 20W -- saw nothing. / Nothing -- by ships Lat 2N, Long 41W. / A.J.S. 25-399 /
[Reverse side] At 36N., W. 61, toward morning, 4 or 5 a minute. / Gulf of Mexico -- several meteors; nothing unusual until 3 a.m.; then many. / Bet Lat 23N., Long. 82 --many after 4 a.m.

Nov. 13 / Radiant point in Leo rises ab. 11 p.m., which in U.S. corresponds with 4 a.m. Greenwich time. / A. J. Sci 2/43/78.

Nov 14 / morning / Slight repetition of mets from Leo in Maryland / A. J. Sci 25-375.

Nov / Great Lyrids / Ap. 20, 1803.

Nov. / Leonids / See Nov., 1872.

[BCF, p. 50:

In the *Amer. Jour. Sci.*, 1-26-396, in many observations upon the meteors of November, 1833, are reports of falls of gelatinous substance:

That, according to newspaper reports, "lumps of jelly" were found on the ground at Rahway, N.J. The substance was whitish, or resembled the coagulated white of an egg;

That Mr. H. H. Garland, of Nelson County, Virginia, had found a jelly-like substance of about the circumference of a twenty-five-cent piece;

That, according to a communication from A. C. Twining to Prof. Olmstead, a woman at West Point, N.Y., had seen a mass the size of a teacup. It looked like boiled starch;

That, according to a newspaper, of Newark, N.J., a mass of gelatinous substance, like soft soap, had been found. "It possessed little elasticity, and, on the application of heat, it evaporated as readily as water."

It seems incredible that a scientist would have such hardihood, or infidelity, as to accept that these things had fallen from the sky: nevertheless, Prof. Olmstead, who collected these lost souls, says:

"The fact that the supposed deposits were so uniformly described as gelatinous substances forms a presumption in favor of the supposition that they had the origin ascribed to them."

In contemporaneous scientific publications considerable attention was given to Prof. Olmstead's series of papers upon this subject of the November meteors. You will not find one mention of the part that treats of gelatinous matter.]

[BCF, pp. 287-288 / See April 1, 1826.]

[BCF, pp. 324-328:

Southern plantations and the woolly heads of Negroes pounding the ground -- cries in northern regions and round white faces turned to the sky -- fiery globes in the sky -- a study in black, white, and golden formations in one general glow. Upon the night of Nov. 13-14, 1833, occurred the most sensational celestial spectacle of the nineteenth century: for six hours fiery meteors gushed from the heavens, and were visible along the whole Atlantic coast of the United States.

One supposes that astronomers do not pound the ground with their heads, and presumably they do not screech, but they have feelings just the same. They itched. Here was something to formulate. When he hears of something new and unquestionable in the sky, an astronomer is diseased with ill-suppressed equations. Symbols persecute him for expression. His is the frenzy of someone who would stop automobiles, railroad trains, bicycles, all things, to measure them; run, with a yardstick, after sparrows, flies, all persons passing his door. This is supposed to be scientific, but it can be monomaniac. Very likely the distress and the necessity of Prof. Olmstead were keenest. He was the first to formulate. He "demonstrated" that these meteors, known as the Leonids, revolved around the sun

once in six months.

They didn't.

Then Prof. Newton "demonstrated" that the "real" period was thirty-three and a quarter years. But this was done empirically, and that is not divine, nor even aristocratic, and the thing would have to be done rationally, or mathematically, by someone, because, if there be not mathematical treatment, in gravitational terms, of such phenomena, astronomers are in reduced circumstances. It was Dr. Adams, who, emboldened with his experience in not having to point anywhere near Neptune, but nevertheless being acclaimed by all patriotic Englishmen as the real discoverer of Neptune, mathematically "confirmed" Prof. Newton's "findings." Dr. Adams predicted that the Leonids would return in November, 1866, and in November, 1899, occupying several years, upon each occasion, in passing a point in this earth's orbit.

There were meteors upon the night of Nov. 13-14, 1866. They were plentiful. They often are in the middle of November. They no more resembled the spectacle of 1833 than an ordinary shower esembles a cloudburst. But the "demonstration required that there should be an equal display, or, according to some aspects, a greater display, upon the corresponding night of the next year. There was a display, the next year; but it was in the sky of the United States, and was not seen in England. Another occurrence nothing like that of 1833 was reported from the United States.

By conventional theory, this earth was in a vast, wide stream of meteors, the earth revolving so as to expose successive parts to bombardment. So keenly did Richard Proctor visualize the earth so immersed and so bombarded, that, when nothing was seen in England, he explained. He spent most of his life explaining. In the *Student*, 2-254, he wrote: "Had the morning of Nov. 14, 1867, been clear in England, we should have seen the commencement of the display, but not its more brilliant part."

We have had some experience with the "triumphs" of astronomers: we have some suspicions as to their greatly advertised accuracy. We shall find out for ourselves whether the morning of Nov. 14, 1867, was clear enough in England or not. We suspect that it was a charming morning, in England --

Monthly Notices, R. A. S. 28-32:

Report by E. J. Lowe, Highfield House, night of Nov. 13-14, 1867:

"Clear at 1.10 A.M.; high, thin cumuli, at 2 A.M., but sky not covered until 3.10 A.M.; sky not overcast until 5.50 A.M."

The determination of the orbital period of thirty-three years and a quarter, but with appearances of a period of thirty-three years, was arrived at by Prof. Newton by searching old records, finding that, in an intersection-period of thirty-three years, there had been extraordinary meteoric displays, from the year 902 A.D. to the year 1833 A.D. He reminds me of an investigator who searched old records for appearances of Halley's comet, and found something that he identified as Halley's comet, exactly on time, every seventy-five years, back to times of the Roman Empire. See the *Edinburgh Review*, vol. 66. It seems that he did not know that orthodoxy does not attribute exactly a seventy-five year period to Halley's comet. He got what he was looking for anyway. I have no disposition for us to enjoy ourselves at Prof. Newton's expense, because, surely enough, his method, if regarded as only experimental, or tentative, is legitimate enough, though one does suspect him of very loose behavior in his picking and choosing. But Dr. Adams announced that, upon mathematical grounds, he had arrived at the same conclusion.

The test:

The next return of the Leonids was predicted for November, 1899.

"No meteoric event ever before aroused such widespread interest, or so grievously disappointed anticipation."

There were no Leonids in November, 1899.

It was explained. They would be seen next year.

There were no Leonids in November, 1900.

It was explained. They would be seen next year.

No Leonids.

Vaunt and inflation and parade of the symbols of the infinitesimal calculus; the pomp of vectors, and the hush that surrounds quaternions: but when an axis of coordinates loses its rectitude, in the service of a questionable selection, disciplined symbols become a rabble. The Most High of Mathematics -- and one of his proposed prophets point to the sky. Nowhere near where he points, something is found. He points to a date --nothing happens.

Prof. Serviss, in *Astronomy in a Nutshell*, explains. He explains that the Leonids did not appear when they "should" have appeared, because Jupiter and Saturn had altered their orbits.

Back in the times of the Crusades, and nothing was disturbing the Leonids -- and if you're stronger for dates than I am, think of some more dates, and nothing was altering the orbit of the Leonids -- discovery of America, and the Spanish Armada, in 1588, which, by some freak, I always remember, and no effects by Jupiter and Saturn -- French Revolution and on to the year 1866, and still nothing the matter with the Leonids -- but, once removed from "discovery" and "identification," and that's the end of their period, diverted by Jupiter and Saturn, old things that had been up in the sky at least as long as they had been. If we're going to accept the calculi at all, the calculus of probabilities must have a hearing. My own opinion, based upon reading many accounts of November meteors, is that decidedly the display of 1833 did not repeat in 1866: that a false priest sinned and that an equally false high-priest gave him sanction.

The tragedy goes comically on. I feel that, to all good Neo-astronomers, I can recommend the following serenity from an astronomer who was unperturbed by what happened to his science, in November, 1899, and some more Novembers --

Bryant, *A History of Astronomy*, p. 252:

That the meteoric display of 1899 had failed to appear -- "as had been predicted by Dr. Downing and Dr. Johnstone Stoney."

One starts to enjoy this disguisement, thinking of virtually all the astronomers in the world who had predicted the return of the Leonids, and the finding, by Bryant, of two who had not, and his recording only the opinion of these two, coloring so as to look like another triumph -- but we may think of sorely stimulated suspiciousness for still richer enjoyment --

That even these two said no such saving thing --

Nature, Nov. 9, 1899:

Dr. Downing and Dr. Stoney, instead of predicting failure of the Leonids to appear, advise watch for them several hours later than had been calculated.]

(To be continued)

Books Reviewed *(Continued from page 187)*

Fort is gone now. But other careful researchers continue to bring attention to the strange, and among the most prolific and respected today is William R. Corliss and his energetic creation, The Sourcebook Project. A decade after its origin, the Project has produced ten fascinating three-ring-binder style Sourcebooks, six thick hard cover Handbooks and — of the most current vintage — three hardbound Catalogs of a proposed series of at least 25.

Corliss' approach is to seek out and scour old and recent scientific literature (usually the stuff held in highest regard by "experts") for bizarre discoveries, traits, occurrences or wonders of nature which are disturbing to the supposedly enlightened community entrusted to come up with satisfactory explanations.

TSB publications, each handsomely produced and meticulously edited under Corliss' guidance, abundantly reprint and excerpt articles and letters on such topics, serving to magnify nature's quirks of the current time as well as of antiquity.

Atmospheric luminous phenomena and weather-related anomalies having been explored in the two previous Catalogs, this release examines unusual events involving Earth's hydrosphere, unexplained sounds and earthquake phenomena; the ability of animals to sense impending quakes is of interest, especially in light of recent international earthquake activity in which such incidents are sometimes prominently mentioned.

A mere listing of all the subheadings under the major categories outlined above would serve little purpose. A Sourcebook Project book must be read to be appreciated for content, beauty and the ability to arouse one's interest in that which is *truly* mysterious. Corliss' unique referencing technique and total of no less than five indexes (time of event, place of event, author, source and subject) at the end assure a timeless and invaluable source of information on the sort of thing *Pursuit* readers care about: the unexplained bits and pieces of and beyond our own environment that might have more to do with reality than the world we think we know.

Thank You, Senator Specter!

Here is further response to my inquiry to the U.S. Congress regarding the article about the "E.T. Law." —Gene G. Kelch

EDITORS' NOTE: Following publication of George Andrews' article, "The E.T. Law," (in *Pursuit* No. 61, First Quarter 1983, pp. 10-11), SITU member Gene Kelch sent letters of inquiry to two congressional delegates from his home state of Pennsylvania: M.C. Lawrence Coughlin (Rep. 13th Dist.) and Sen. Arlen Specter.

Congressman Coughlin's response stated that ". . . there is no federal law making it illegal to have contact with extraterrestrial entities. However, there is a regulation of the National Aeronautics and Space Administration (NASA) governing certain extraterrestrial exposures . . ." Enclosed with Mr. Coughlin's letter was a pertinent report by Daniel Hill Zafren, a staff member of the Congressional Research Service; the text of Part 1211 of 34 FR [Federal Regulation] 11975 of July 16, 1969, was appended. Both the report and the appended regulation were published in *Pursuit* No. 62, Second Quarter 1983, pp. 56-58.

Senator Specter now responds by passing along the reply he received to his direct request for information from NASA:

NASA

National Aeronautics and Space Administration

Washington, D C 20546

See also George Andrews' letter in **Pursuit** *No. 63, Third Quarter 1983, pp. 138-139.*

Honorable Arlen Specter
United States Senate
Washington, DC 20510

Dear Senator Specter:

This letter responds to your September 12 inquiry on behalf of Mr. Eugene G. Kelch concerning an article entitled, "The E.T. Law," written by Mr. George Andrews, which appeared in the first quarter 1983 issue of *Pursuit* magazine. The article alludes to a law "already on the books" that makes it a crime for a United States citizen to make physical contact with extraterrestrials or their vehicles. The following information should help clarify the contents of this article.

The quotes used by Mr. Andrews were taken from a NASA regulation which was issued pursuant to NASA authority to issue regulations. It was issued July 16, 1969, just before the first landing on the Moon by the Apollo 11 astronauts. You may recall that NASA quarantined the astronauts and the lunar samples after they returned from the Moon in a lunar quarantine facility located at the Johnson Space Center, Houston, Texas. The regulation was intended to prevent unauthorized persons from coming in contact with either the astronauts or the lunar samples during the period of quarantine.

The regulation is meant to deal, and is stated to deal, with all NASA manned and unmanned space missions. It was NASA's way of responding to any threat of contamination of the Earth that might result from a NASA mission into outer space. It was not intended to, nor did it, implement any specific law passed by the Congress regarding the subject of extraterrestrial exposure on Earth. It is NASA's implementation of Article IX of the 1967 Outer Space Treaty which requires States Parties to the Treaty to conduct exploration of outer space so as to avoid adverse changes in the Earth's environment resulting from the introduction of extraterrestrial matter. NASA's authority in the regulation could only apply and does only apply to NASA's missions. The date of the regulation clearly shows that the impetus for it was the impending landing on the Moon which occurred on July 20, 1969.

Contrary to Mr. Andrews' implications in his article, NASA's regulation would not apply to the hypothetical circumstance of an extraterrestrial vehicle landing on some road in front of a car. Although the NASA regulation does provide criminal penalties, these criminal penalties are pursuant to 18 U.S.C.799 which deals with violations of NASA regulations.

In summary, there is absolutely no possibility that NASA would attempt, nor does NASA have the authority to attempt, to enforce this regulation in the manner suggested by Mr. Andrews.

We trust that the above information will be useful to Mr. Kelch. Please let us know when we may be of further assistance.

Sincerely,

s/ John F. Murphy
Assistant Administrator
for Legislative Affairs

THE SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

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ORIGINS OF SITU/PURSUIT

Zoologist, biologist, botanist and geologist Ivan T. Sanderson, F.L.S., F.R.G.S., F.Z.S., in association with a number of other distinguished authors, established in 1965 a "foundation" for the exposition and research of the paranormal—those "disquieting mysteries of the natural world" to which they had devoted much of their investigative lifetimes.

As a means of persuading other professionals, and non-professionals having interests similar to their own, to enlist in an uncommon cause, the steering group decided to publish a newsletter. The first issue came out in May 1967. The response, though not overwhelming, was sufficient to reassure the founding fathers that public interest in the what, why and where of their work would indeed survive them.

Newsletter No. 2, dated March 1968, announced new plans for the Sanderson foundation: a structure larger than its architects had first envisioned was to be built upon it, the whole to be called the Society for the Investigation of The Unexplained, as set forth in documents filed with the New Jersey Secretary of State. The choice of name was prophetic, for Dr. Sanderson titled one of the last of his two-dozen books "Investigating the Unexplained," published in 1972 and dedicated to the Society.

Another publication was issued in June 1968, but "newsletter" was now a subtitle; above it the name *Pursuit* was displayed for the first time. Vol. 1, No. 4 in September 1968 ("incorporating the fourth Society newsletter") noted that "the abbreviation SITU has now been formally adopted as the designation of our Society." Issue number 4 moreover introduced the Scientific Advisory Board, listing the names and affiliations of the advisors. Administrative matters no longer dominated the contents; these were relegated to the last four of the twenty pages. Most of the issue was given over to investigative reporting on phenomena such as "a great armadillo (6 feet long, 3 feet high) said to have been captured in Argentina"—the instant transportation of solid objects "from one place to another and even through solids"—the attack on the famed University of Colorado UFO Project headed by Dr. Edward U. Condon—and some updated information about "ringing rocks" and "stone spheres."

Thus SITU was born, and thus *Pursuit* began to chronicle our Investigation of The Unexplained.

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