UFOs, "N-RAYS" and PATHOLOGICAL SCIENCE

By Philip J. Klass*

In the autumn of 1903, less than ten years after Wilhelm Roentgen had discovered X-rays and Henri Becquerel had found that mysterious radiation from pitchblende could darken photographic plates, an even more mysterious type of radiation was reported by Prof. R. Blondlot: N-RAYS.

Blondlot, head of the physics department at the University of Nancy was a respected member of the French Academy of Sciences. In its Comptes rendus he reported that the mysterious N-rays appeared to be emitted spontaneously by many different metals and that when they were present they increased the ability of the human eye to see objects in a nearly dark room. Within several months, twelve more papers on the amazing N-rays appeared in the Academy's publication. A. Charpentier reported that N-rays also improved the senses of hearing and smell and seemed to be emitted by the brain, by nerves and by muscles as well as by metals. His paper was sponsored by Arsonval, France's foremost authority on electricity and magnetism. [1.]

Henry Becquerel's son Jean described an experiment which appeared to show that N-rays could be transmitted over a wire. When one end of the wire was placed near a human brain, its N-rays seemed to emerge from the other end of the wire to cause a variation in the intensity of a faintly luminous detector. If the subject was anesthetized with ether, the N-rays emitted by the brain changed in intensity. He even reported that metals could be anesthetized with ether or alcohol, but this seemed to cut off their emissions of N-rays!

Soon French biologists, physiologists, psychologists, chemists, botanists and geologists were experimenting with the mysterious N-rays. [1.] Excited investigators reported the discovery that N-rays were given off by growing plants, by a vibrating tuning fork and even by a human corpse. But N-rays were not radiated by wood; on this all investigators agreed!

Blondlot constructed a spectrometer using aluminum lenses and an aluminum prism which served to defract the N-rays into a line spectrum and enabled him to measure the wavelength of the rays, he reported. By the summer of 1904, nearly one hundred papers on N-rays had been published by the French Academy. And it had announced the award to Blondlot of the Lalande prize of 20,000 francs and its gold medal for the discovery of N-rays!

Scientists in other European countries attempted to duplicate the French experiments but strangely they could not detect any evidence of N-rays. One of these was an American-born scientist, Dr. R.W. Wood, then a foreign member of the Royal Society of London. Dr. Wood arranged to visit Blondlot's laboratory so the discoverer himself could demonstrate the existence of the N-rays. Because N-ray experiments had to be conducted in a very dimly lighted room, it was possible for Wood to test Blondlot's hypothesis without his knowledge. For example, during one spectrometer experiment, Wood secretly removed the aluminum prism which was necessary to produce the spectrum effects. Despite this, Blondlot reported that he observed the normal effects.

When Wood held up a metal file in the darkened room, the N-rays it supposedly emitted seemed to enable Blondlot to read the hands of a dimly illuminated clock. But when Wood secretly substituted a wooden ruler of roughly the same dimensions for the metal file, Blondlot could still read the clock. (Recall that wooden objects did not emit N-rays.)

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These and similar tests convinced Wood that while Blondlot was honest and well-intentioned, he had allowed wishful thinking and his imagination to overpower his scientific methodology and objectivity. This would also explain how other French scientists could conduct experiments which seemed to confirm N-rays.

In the Sept. 29, 1904, issue of Nature, Wood exposed N-rays as pure fantasy by describing his own tests in Blondlot's laboratory. Three months later, when the French Academy presented the Lalande prize to Blondlot, it announced that the award was given "for his life work, taken as a whole."

In the early 1920s, a similar type of mysterious radiation, called "Mitogenetic rays," was reported. They seemed to be emitted by growing plants and living things. But the Mitogenetic ray proved to be a member of the same family as the N-ray of two decades earlier.

These and similar self-delusions by small groups of scientists have been aptly termed "Pathological Science" by General Electric's Dr. Irving Langmuir. One of the characteristics of Pathological Science, Langmuir noted, is that the effects reportedly observed do not seem to follow the "ordinary laws of science." [2.] For example, when Dr. Wood asked Blondlot how a shift of only 0.1 mm. in his spectrometer mechanism could possibly produce the effect he claimed to see when the slit itself was 20-30 times as wide, Blondlot reportedly replied: "This is one of the inexplicable and astounding properties of N-rays." [1.]

Langmuir called "flying saucers" and the hypothesis that they are spaceships from other worlds still another manifestation of Pathological Science. (Like N-rays, UFOs seem to have "inexplicable and astounding properties.")

Despite the alleged visits by hundreds or thousands of extraterrestrial spaceships, there is not a single piece of hard evidence of the kind that Apollo 11 left behind on man's first visit to the Moon.

Whatever scientific respectability the extraterrestrial hypothesis now enjoys results entirely from a tiny handful of scientist-proponents who rest their case entirely on what one of them calls "reports from seemingly credible witnesses." Another calls them "incredible things told by credible people."

Because several of these scientist-proponents have impressive academic credentials, it is automatically assumed in some quarters by those who have not delved deeply, that their convictions are solidly based on rigorous scientific objectivity and methodology.

The crucial question is whether these scientist-proponents of the extraterrestrial hypothesis really devote diligent effort to testing witness credibility and to seeking less exotic explanations.

Or are they so credulous and subconsciously committed to the extraterrestrial hypothesis that they can not really discriminate between fact and fantasy except in the most obvious cases?

In other words, have these scientist-proponents of the extraterrestrial hypothesis become unsuspecting victims of that dangerous virus, Pathological Science?

Two of the best-known and most experienced of these scientist-proponents are Dr. J. Allen Hynek of Northwestern University and Dr. James E. McDonald of the University of Arizona. Hynek has been an active UFO investigator for more than 20 years and McDonald for more than 13 years. Let's first examine Hynek's record.

On April 24, 1964, the small, sleepy town of Socorro, N.M., achieved international fame, especially in UFO circles, when a young policeman named Zamora said he saw a UFO land on the outskirts of town. He drove closer and from a distance of several hundred yards, Zamora said he saw an egg-shaped object. During this initial brief observation, he said he thought he could make out two figures dressed in white coveralls moving around the object.

He drove closer, got out of his car and said he approached to within less than a hundred feet of the craft. Suddenly, it took off and flew away noiselessly, he reported. Zamora radioed in and asked that a specific state policeman be sent to the scene. According to their statements, they found four wedge-shaped marks, unsymmetrically located, on the ground along with a few barely burned bush branches. Presumably, the marks were made by the craft's landing gear.

These indentations on the ground clearly ruled out the possibility that Zamora had misidentified Venus or a weather balloon. Either a craft of very remarkable design had landed on the outskirts of Socorro, or it was a hoax.

Dr. Hynek, then a UFO consultant to the U.S. Air Force, was asked to fly to Socorro to investigate the case, which he did. His subsequent trip report to the USAF called this the most crucial UFO case in nearly two decades. But despite its great importance, Hynek spent only one day at Socorro because of a previous engagement elsewhere. It was not until four months later that he found time to return, and then for only one day.

In the report on his first visit, Hynek said that the policeman was "basically sincere, honest and reliable. He would not be capable of contriving a complex hoax, nor would his temperament indicate that he would have the slightest interest in such." Hynek failed to consider the possibility that the hoax might have been contrived by another and that Zamora might be only an accomplice.

Having quickly ruled out the possibility of a hoax, Hynek's report does not indicate that he gave serious consideration to the possibility of an extraterrestrial spaceship. Instead, Hynek decided that the object that Zamora had reported probably was some secret new military aircraft. If this hypothesis were true, the U.S. had indeed made a revolutionary breakthrough both in aerodynamic design and in propulsion and was now able to build egg-shaped aircraft with noiseless propulsion. Why so revolutionary an airplane would be flying near Socorro, when the USAF tests new aircraft in California and the Navy in Maryland, Hynek did not bother to consider. Nor why it would be operating without a chase-plane or security patrol.

Hynek urged the USAF to locate the strange craft and to bring it back to Socorro to show the press and public. He urged that "movies be taken of it departing in the manner described by Zamora and under the same lighting conditions. This could then be played at any future (Congressional) hearings on flying saucers."

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The USAF followed Hynek's advice but quickly determined that neither it nor its sister military services had scored any such revolutionary breakthrough in both aerodynamics and propulsion. The USAF even canvassed all aircraft manufacturers to see if one of them had secretly developed the weird craft with its own funds and had been testing the craft near Socorro. But the results were equally disappointing.

During Hynek's second visit to Socorro on Aug. 15, 1964, he said he talked with a number of local citizens who generally vouched for the policeman's character. But he also encountered one man who suspected a hoax. The man, who lived close to the site of the alleged landing and had been home at the time, said he had not seen anything nor had he heard the unusual noises which Zamora said the craft made briefly during landing and take-off. Hynek briefly mentioned the man's suspicions in his second trip report but strongly rejected the possibility of a hoax.

In December of 1966, when I visited Socorro, I talked with many persons, including several science-engineering professors at the New Mexico Institute of Mining and Technology. It was quite surprising to find that none of these men were even slightly interested in the local UFO case. If the story were true, the greatest scientific event of the millenia had occurred only a couple miles away and yet these scientists were markedly indifferent. When I asked one man why there was so little interest, he urged me to "nose around a bit." When I sought more guidance, he pointed out that the town of Socorro had been waging a campaign to attract tourists and industry. That same evening, while reading the local newspaper, I found an item which stressed Socorro's need to attract tourists and industry.

Two major highways bring tourists through Socorro, but few stop unless they need food or gas. There is only one traffic light. One of the curious things that now attracted my attention was the spot which the UFO allegedly had selected for its landing. It was conveniently located approximately half way between these two highways.

An improved road was quickly built to connect the site to the two highways because the incident did attract hundreds of curious tourists and UFO buffs. Investigation disclosed another curious coincidence: the property where the UFO allegedly landed is owned by the policeman's boss--the mayor of Socorro. The mayor is the local town banker who would not be unhappy to see local businessmen profit from an influx of tourists.

Despite this, in my last correspondence with Hynek about the Socorro case, he still doubts that it could possibly be a hoax. He explained that during his second visit to Socorro, "I gave the deliberate impression to many that I would welcome any behind the scenes confidences, but none came."

The Dec. 17, 1966, issue of The Saturday Evening Post carried a feature story by Hynek entitled: "Are Flying Saucers Real?" It started with an account of a seemingly strong UFO report in which the object reportedly had been sighted both visually and on radar. Hynek said that the radar had "picked up the UFO at 100,000 ft."

Knowing that height-finder type radars, the only kind that measure target altitude, had been designed in the early 1950s when enemy bombers flew below 50,000 ft. altitude, I was skeptical that they could tell the height of any

target at such extreme altitudes. Out of curiosity I called the Air Defense Command Headquarters at Colorado Springs to check this point. They assured me that their height finder radars could not show a target at anything close to 100,000 ft. altitude. As an added check, I called an old friend at General Electric who, I learned, had himself helped design this particular radar some years earlier. He also assured me that it could not possibly display any target at 100,000 ft. altitude. On May 18, 1967, I wrote to Hynek and sought clarification of this discrepancy.

Hynek replied as follows on May 24: "The reported height was indeed 100,000 feet. However, as I learned shortly thereafter, this was someone's garbled visual estimate of the height and not a radar estimate at all. I learned this too late to get it into the article, but even so, since UFOs are reports, it was the 100,000 feet that was reported. I think we are justified in making all sorts of corrections and interpretations to a report, but no one can gainsay that that is what the original report stated."

In January of 1967, two teen-age boys in Michigan took a series of four Polaroid pictures of a saucer-shaped object. The story and pictures were carried by the Associated Press and published in hundreds of newspapers, including The New York Times, which rarely carries UFO stories.

According to the story told by the boys, they took the four pictures before the strange craft suddenly zoomed away. Shortly after the UFO departed, they said, an Air Force helicopter flew near and they also photographed it. Later, the helicopter pilot said he had not seen any UFO, but if it had departed before the helicopter arrived, this was understandable.

Although the AP reporter was not an experienced UFO investigator, he did think to examine the backing sheet against which the Polaroid prints had been processed. The backing sheet retains a crude image of each photo. The reporter made a strange discovery: photos #1 and #2 were of the UFO, but photo #3 was of the USAF helicopter, followed by two more pictures of the UFO. Clearly the boys had not told the truth about one part of their story. This discrepancy was noted in the AP dispatch and in most newspaper articles.

The Detroit News, seeking expert opinion on the authenticity of these UFO photos, sent copies and details to Hynek for his appraisal. Six days later, the Jan. 16, 1967, issue of the newspaper carried a large feature story on the case under the following headline: EXPERT SEES "NO HOAX" IN BOYS UFO PHOTOS.

"One of the nation's leading unidentified flying objects (UFO) experts believes the 'flying saucer' photographs taken last week by two Macomb County brothers are 'strikingly similar' to other UFO reports he has investigated.... Hynek told The Detroit News in an exclusive interview that 'analysis so far does not show any indication of an obvious hoax.'"

"The striking thing to me," Hynek was quoted as saying, "is the similarity these pictures have to other photos I have seen..." The UFO did indeed bear a close resemblance to the UFO in pictures that had been taken in 1957 by a ship's radio officer named Z.T. Fogl. The Fogl UFO pictures had been widely published and acclaimed as being among the few really authentic pictures of a flying saucer.

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What Hynek apparently did not know was that some months earlier, Fogl had publicly admitted that his UFO pictures were a hoax!

Hynek's confidence in the authenticity of the boys' pictures apparently was not shared by their mother. The newspaper said that she had flatly refused to release the original UFO prints to the USAF or to private investigators for detailed analysis. To my knowledge, they have never been released. I have heard that the boys finally agreed to take a "lie detector" test but failed to "pass" it, but my information is third-hand.

On the night of April 21, 1967, the small town of South Hill, Va., like Socorro three years earlier, achieved international fame when a giant, tank-shaped UFO was reportedly seen to take off from a small macadam road on the outskirts of town by a respected senior citizen, Mr. Clifford Crowder. Accord-to his story, the UFO took off like a bullet with a flash of flame that set fire to the macadam road, causing it to burn for several minutes after the object had gone. (This is curious because asphalt will not support combus-tion.) Crowder brought local and state police to the scene and they found a small, irregular-shaped burned area on the road.

Hynek was not able to visit South Hill himself and so he sent a trusted associate, William Powers, also an experienced UFO investigator. After Powers arrived at South Hill, he learned that the police officers had made a very inter-esting discovery on the night of the incident while searching the area.

In the middle of the burned spot, where the giant craft allegedly had landed and taken-off, the officers found four completely charred paper matches. Three of the matches were sitting side-by-side, so close together that they could have been covered with a silver dollar. If a giant craft had landed and taken off from this spot, with the blast of flame that had been reported, the matches would have been blown away. After the matches were found, the state police concluded that the incident was a hoax and they did not even bother to report it to a local superior.

This I learned during my own two-day investigation several months later. Yet after Powers had completed his own investigation and was interviewed by the South Hill newspaper, he was quoted as saying: "Crowder is telling exactly what he saw and there is no reason to disbelieve him." And several days later, when Hynek was interviewed by a Richmond newspaper, he was quoted as saying: "(I) can't think of it being a hoax."

During my visit to South Hill, I found that at least one local citizen disagrees with the Powers-Hynek appraisal. Alongside the burned spot in the road I found painted: "HOAX".

In May of this year, a strange UFO was reported by two teen-age boys near Palatine and Lake Zurich, Ill., and independently by a third, adult, witness. One of the boys described the object as being "saucer-shaped, like a World War I English helmet." He said "it had a concave indentation in the center of the underside with a large light in it." The boys climbed onto a house roof for a better look but said the UFO came so low that they had to lie down flat on the roof to avoid being knocked off.

The adult witness, himself a private pilot, said the object had lights but not ordinary aircraft lights. However, he added: "I got the impression that it could have been someone taking night photographs from an airplane but I don't know why they would want to photograph this area."

The Chicago Tribune naturally turned for expert opinion to Hynek at nearby Northwestern. Its edition of May 25 quoted Hynek in a now-familiar phrase. The UFO, he said, "bears a striking similarity to other UFOs reported in America and in other countries." Drawing on his years of UFO experience, Hynek said: "You have to conclude from talking to these people that they are either badly mistaken or that they really did see an unusual object in the sky."

When the newspaper article appeared, the UFO was quickly identified as a twin-engine airplane being used to test new aerial photographic-illumination equipment. The airplane had conventional lighting plus a powerful flash lamp. Despite the boys' statement that the object had come so low it nearly knocked them off the house roof, the pilot was flying at 1,500 ft. (In contrast to the 50 column-inches which the Tribune devoted to the original UFO report, it could spare only 2 column-inches for the explanation in a subsequent edition.)

The fact that a conventional airplane seen at night under somewhat unusual conditions can appear to some observers to be a saucer-shaped object provides, or should provide, valuable insight into the UFO mystery. It also recalls the French scientists who thought they could see the effects of N-rays.

Dr. James E. McDonald is one of the nation's most prolific UFO investigators, in a quantitative sense. As of mid-1968, he estimated that he had personally investigated approximately 300 UFO cases and interviewed as many as 450 persons.

McDonald admits that "evaluating credibility of witnesses is, of course, an ever-present problem...(but) I have concluded that common sense and previous everyday experience with prevaricators and unreliable persons lead each serious UFO investigator to evolve a set of criteria..." His own criteria are simple and straight-forward: "...in those comparatively rare cases where the witness discloses that he immediately interpreted what he sighted as an extraterrestrial device, I back away from what is likely to be a most unprofitable interview."

He says that "in interviewing UFO witnesses, it is important to try to ascertain whether the witness was, prior to his reported sighting, familiar or unfamiliar with books and writings on UFOs. Although a strong degree of familiarity with the literature of UFOs does not negate witness testimony, it dictates caution... However, in my own experience, a much more common reaction to questions concerning pre-sighting interest in UFO matters is some comment to the effect that the witness not only knew little about UFOs beyond what he'd happened to read in newspapers, but he was strongly disinclined to take the whole business seriously...

"Obviously, an intending prevaricator might seek to deceive his interrogator by inventing such an assertion; but I can only say that suspicion of being so duped has not been aroused more than once or twice in all of the hundreds of witnesses I have interviewed," McDonald has stated. [3.] (Emphasis added.)

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Such abiding faith in the honesty of one's fellow man is in many ways to be commended. But is it a useful trait for a UFO investigator trying to sort fact from fiction? Let's briefly examine McDonald's record in the UFO field.

When McDonald spoke in Washington on Oct. 19, 1966, to the local chapter of the American Meteorological Society, he showed pictures of one of the most unusual UFOs ever seen. It resembled a black smoke-ring, or "hoola hoop." The series of six pictures showed the UFO merging with a low overhead cloud and finally disappearing inside it. The photos had been taken in 1957 at Fort Belvoir, near Washington, by George Stofko, then an enlisted man based there.

It was several years later until Stofko made his pictures public and this curious delay prompted McDonald to seek an explanation when he later interviewed Stofko. McDonald received a simple explanation: it was against Fort Belvoir regulations to take pictures on the base. Also, Stofko said, he thought he had photographed some secret new Army aircraft and that this would compound the felonly. McDonald was satisfied with this explanation.

If McDonald had checked this one point by calling Fort Belvoir, he would have learned that there is absolutely no regulation against taking outdoor photos on the base, nor was there any such regulation when Stofko was there. (When I visited Fort Belvoir, carrying two cameras and took pictures from the same spot where the UFO pictures were taken, no one attempted to stop me.)

Later, during the University of Colorado UFO study, Dr. William K. Hartmann visited Fort Belvoir to investigate this case. He chanced to meet a man who had been on the base in 1957 and who quickly identified the Stofko UFO as a smoke-ring. It was one of many produced by exploding TNT in a barrel during a series of experiments to try to produce mushroom-shaped clouds to simulate nuclear explosions for troop training maneuvers. [4.]

During the same Washington talk, McDonald discussed the Socorro UFO case. He said it "is regarded as a credible report by all investigators."

McDonald also discussed a series of UFO pictures taken in 1965 near Santa Ana, Calif., by a highway inspector named Rex Heflin. According to Heflin's story, he was driving on a side road near the Santa Ana Freeway around noon when he spotted the unusual object, shaped somewhat like a straw-hat, flying noiselessly a few hundred yards away, near the Freeway. (Curiously, none of the other motorists visible on the Freeway reported seeing the giant object.) Heflin instantly recognized that this was no ordinary aircraft, stopped his car, reached for his Polaroid camera and made the photos, he said.

If this account is true, the pictures in Heflin's hands were among the most significant ever taken by man. But it never occurred to Heflin to rush the pictures to the police (despite his training in the police reserves) or to a newspaper, or even to call his office to report the exciting incident. Instead he went about his business until around 6 p.m. when he returned to his office and showed the UFO pictures to his associates. If anyone there took them seriously, no one seemed to recognize their great potential value.

It was not until two weeks later that Heflin decided to submit the pictures to LIFE magazine. Its editors quickly rejected their use, either because they failed to appreciate the news value of the first photos of a spaceship from another world or else because the pictures were an obvious hoax.

Heflin made lots of copies of his UFO photos for his friends, and their friends. Six weeks after the UFO photos had been taken, a set came to the attention of a local druggist. He was the first person to both take the pictures seriously and to recognize their great potential importance if they were authentic. Through him they were promptly published by a local newspaper and the next day they were distributed by a national wire service, bringing them to the attention of the Air Force.

When the Air Force sent a representative to Heflin to ask to borow the original prints for analysis, he was told a curious story. Only the night before, Heflin said, a stranger had come to his home, claiming to represent the Air Force. Heflin said he had given him the valuable originals. Despite Heflin's previous FBI training in the police reserves, it had simply not occurred to him to examine the stranger's credentials, to ask for a receipt or to even get his name. "If and when" the prints were returned, Heflin said, he would be happy to loan them to the USAF.

But the original prints had disappeared forever. When some UFO buffs suggested that the USAF really did have the photos and was withholding them, Heflin's Congressman offered to hold an investigation. But Heflin declined, saying he would now simply like to forget the whole matter.

These and other discrepancies in the Heflin case were widely known in the fall of 1966 when McDonald discussed the case, yet he seemed to find Heflin a "credible witness," with pictures to back up his story.

On March 12, 1968, when McDonald spoke to the Canadian Aeronautics and Space Institute in Montreal, he selected ten cases from the hundreds he had investigated to support the extraterrestrial hypothesis. One might assume that these ten were among the strongest and from the most credible witnesses.

One of these involved two college-age boys from Kansas City and had reportedly occurred on Aug. 12, 1961. The young men reported seeing a giant UFO while driving in an open-top convertible. The UFO was said to have been hovering only 50-100 feet off the ground a few blocks away so the boys said they drove up almost directly under the UFO and watched for several minutes. This is the type of UFO case that impresses McDonald: multiple witnesses, a close-range sighting and several minutes observation for detailed examination.

The Air Force investigator who interviewed the boys shortly after the incident said they had described the UFO as being the size of "a football field" (300 ft.) and said it resembled a "sled with running boards." But when McDonald later interviewed them, the boys said the UFO was only 100 ft. in size and they flatly denied having earlier said that it looked like a "sled with running boards." McDonald implied that the USAF investigator had been careless.

But McDonald admitted that in his interviews with the two boys, they had given different descriptions of the shape of the UFO despite the claim of close-quarters observation for several minutes. McDonald said that one boy reported the UFO was disc-shaped, while the other said it was a rounded cylinder. The

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description of the UFO's flight profile when it departed given by one boy differed from that of his companion. But these discrepancies failed to shake McDonald's confidence in the boys as "credible witnesses."

The Sept. 26, 1967, edition of the Pittsburgh Post-Gazette reported on McDonald's talk to scientists from the Westinghouse Research and Development Center. It reported that McDonald "told about cases, which he said he had personally investigated, in which large trucks had apparently been picked up and moved short distances in the presence of UFOs." *

If true, the Earth not only has alien visitors but they have malicious if not hostile intent. Clearly such evidence should be brought to the attention of top government officials and McDonald got his chance in the summer of 1968 when he appeared at Congressman Roush's "Symposium on Unidentified Flying Objects." McDonald's testimony and prepared statement occupy more than 70 pages or more than one-quarter of the entire published proceedings. He discussed more than 40 UFO cases, but there was not a single mention of those where the UFO allegedly had picked up a truck and dumped it into a ditch or farm field. What had happened to shake McDonald's confidence in what had seemed to be "credible witnesses" only a few months earlier?

McDonald feels competent to sort fact from fantasy in most UFO cases but he does have one strange qualification. If a witness merely claims to have seen a saucer-shaped craft, complete with windows and landing gear, McDonald feels confident he can himself appraise the person's credibility. But if the person adds a few more details, saying that he saw creatures in the craft or that creatures emerged from the craft and perhaps attempted communication, then McDonald doubts his qualifications to assess that person's credibility. For these "occupant cases," as they are known, McDonald says that "expert psychological opinion is badly needed in assessing such reports." [3.]

But occasionally McDonald does venture an appraisal of an occupant case. One of these, which he personally investigated during a Navy sponsored trip to Australia in 1967, involved an Anglican missionary named Father Gill, then based in New Guinea. In the late 1950s, Gill's superior, Father Cruttwell, had become very interested in flying saucers and wrote to a British UFO magazine for more information. To Cruttwell's delight, he was asked to become an official member of the International UFO Observer Corps with full responsibility for investigating all UFO cases in New Guinea. For a lonely missionary, this must have been an exciting responsibility.

Cruttwell promptly deputized several missionaries under his authority and they in turn alerted the natives to report any flying saucers. Soon the natives were turning in UFO reports, usually of glowing objects seen at great distances. But instead of being reported in the traditional saucer shape, most UFOs were said to resemble Tilley lamps -- a kerosene lamp widely used there.

The most fantastic UFO sighting report came from Gill and was said to have occurred on two successive evenings, June 26-27, 1959. Here is how Gill began his letter to Cruttwell to report the amazing incident:

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* It seems strange that extraterrestrial visitors from advanced civilizations would waste time in such childish pranks. One might rather expect that they would have landed on the Moon and carried off all, or part, of Surveyor 3. Yet it was completely intact when the Apollo 12 crew arrived.

"Here is a lot of material--the kind you have been waiting for, no doubt; but I am in some ways sorry that it has to be me who supplies it. Attitudes at Dogura in respect of my sanity vary greatly, and like all mad men, I myself think my grey cells are O.K."

According to Gill's report, on the evening of June 26, 1959, at approximately 6:45 p.m., he and some natives sighted a distant light. As it came closer, he said, they could make out a saucer-shaped craft and four "men" who appeared to be working on the deck of the craft. Each of the men seemed to be surrounded with a luminous halo-like glow. Gill said that he and his companions watched in amazement for more than three hours until the UFO left.

It is not surprising that Gill and his companions were too spellbound to even think of leaving to eat dinner on June 26, according to his detailed chronological report. It is not every night that one is privileged to see a spaceship from another world and to watch its crew at work. Nor is it surprising that Gill and the natives reportedly assembled the next evening in the hope that the craft and its exciting visitors would return. And return they did, shortly after 6 p.m., according to Gill's account.

Even more exciting things were in store on this second evening. Gill said: "I stretched my arm above my head and waved. To our surprise (one) figure did the same." When both Gill and a native waved, all four figures on the craft reportedly waved back. "There seemed to be no doubt that our movements were answered," Gill reported. At this moment, just before 6:30 p.m., it would have seemed that the extraterrestrial visitors not only were friendly but anxious for further contact with these Earthlings.

But then, according to Gill's account: "At 6:30 p.m., I went to dinner."

A historic moment is in the offing, but Gill apparently is suffering such acute pangs of hunger at 6:30 p.m. that he passes up the opportunity in favor of dinner. When Gill returned from dinner at 7 p.m., he said the UFO was still visible but it appeared much smaller than before and the crew was no-where to be seen. Later the UFO departed. If Gill later regretted the apparent rudeness of his 6:30 p.m. departure for dinner and the great opportunity he may have missed as a result, he does not express such views.

Cruttwell was away at the time of the incident so Gill first reported what he called a "breathtaking" experience to a fellow missionary in a letter that began this way:

"Dear David:

Life is strange, isn't it? Yesterday I wrote you a letter (which I still intend sending you) expressing opinions of UFOs. Not less than 24 hours later, I have changed my views somewhat..."(emphasis added.)

Gill concluded his letter with this post-script:

"P.S. Do you think Port Moresby should know about this?... It's interesting Territory news if nothing else."

When Cruttwell wrote his long report on UFO sightings in New Guinea, including Gill's, he cautioned: "I have faithfully recorded what they have told me without embellishments and the reader must judge the reliability of their statements."

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How does McDonald evaluate this "occupant case"? When he spoke to the Naval Ordnance Laboratory near Washington on Jan. 29, 1968, he said that after his conversation with Gill, "I'm satisfied that Gill was a very reliable observer." And a few months later, during the Roush UFO symposium, McDonald said he was impressed with this case because "this minister didn't begin to put any religious interpretation on it. He said this is what he saw, and he wrote very careful notes about it. It is that kind of evidence...that impresses me." [3.] (Emphasis added.)

McDonald candidly admits that he feels "uncomfortable" about the fact that most UFO photos have turned out to be hoaxes, as well he should. But on June 10, 1969, during a talk in Washington, McDonald showed two UFO photos which he had personally investigated and which he said: "I now regard very seriously."

The two UFO photos had been taken nearly 20 years before near McMinnville, Ore., by a Mr. and Mrs. Paul Trent. McDonald seemed to be in good company in his appraisal of the Trent pictures because they had been given strong, if slightly qualified, endorsement by Dr. William K. Hartmann after his own analysis for the University of Colorado UFO study.

In the University of Colorado report, Hartmann had written: "This is one of the few UFO reports in which all factors investigated, geometric, psychological and physical appear to be consistent with the assertion that an extraordinary flying object, silvery, metallic, disk-shaped, tens of meters in diameter, and evidently artificial, flew within sight of two witnesses. It cannot be said that the evidence positively rules out a fabrication, although there are some physical factors such as the accuracy of certain photometric measures of the original negative which argue against fabrication." [4.] (Emphasis added.)

According to the Trents, the photos were made on the evening of May 11, 1950, shortly after sunset. It was nearly a month later before the Trents made the pictures public, upon the urging of a banker friend. The photos and the story were first published on the front page of the June 8, 1950, issue of the McMinnville Telephone Register and two days later in the Portland Oregonian.

There are strange discrepancies in the Trent's description of the incident as reported by the two newspapers. Both articles were based on personal interviews and contain direct quotes. In the McMinnville newspaper, the Trents were quoted as saying that they both were in the back yard at the time and both saw the UFO simultaneously and immediately thought of getting their camera. Mr. Trent reportedly thought the camera was in the car and went to look for it there. Mrs.Trent was sure it was in the house and she looked there and found it.

But according to the Portland newspaper, Mrs. Trent was outside alone when the UFO flew near. She first hollered for her husband, then went inside to get him. While there she also got the camera.

Careful examination of the two Trent photos shows that shadows are visible on the east side of the garage and strong shadows are visible on the south face of a distant white house. These are the kind of shadows that would be expected if the pictures had been taken in the morning, rather than in the early evening as the Trents claim. Hartmann also noted these shadows and admitted that they

"suggest a daylit photo...one could argue that the photos were taken on a dull, sunlit day, say, at 10 a.m." But when Hartmann visited the Trents, he came away convinced that they were credible witnesses.

Seeking another possible explanation for the "morning-like" shadows, he suggested that it "seems possible that half-an-hour after sunset, the cloud distribution could result in a dull illumination preferentially from the northeast." In other words, that light from the already set sun was being reflected off the overcast sky (which shows in the photos) to produce the shadows. But so far as is known, Hartmann never tried to take photographs at this time under similar overcast conditions to see if such shadows would result.

There is one very basic flaw in this hypothesis. During the early evening of May 11, 1950, McMinnville had clear skies and unlimited visibility, NOT the overcast that shows in the Trent photos. This I discovered when I obtained the weather report for McMinnville from the National Weather Records Center. This report did show, however, that it was smokey and hazy during the morning of May 11, 1950.

In my investigation of the Trent photos I have collaborated with a bright young astronomy student and camera buff at Northwestern University, named Robert Sheaffer. Based on the position of shadows cast by the eaves of the garage on the east side of the building, Sheaffer calculates that the Trent photos were taken at approximately 7 a.m. He also concludes that the "first" photo was really taken after the "second."

I was especially interested to discover that the Trents are what are known as "repeaters." That is, they claimed to have seen UFOs on numerous occasions prior to the one that produced the photos and on frequent occasions since. Most experienced UFO investigators have learned to be extremely suspicious of "repeaters."

When I wrote to Hartmann to ask if he had known that the Trents were repeaters, he replied on July 17, 1969, as follows: "Yes, I knew the Trents were repeaters. Mrs. Trent told me about her other sightings...When I visited the area, I found that the whole valley was a hotbed of UFO sightings." Yet he had made no mention of this in his report on the case.

During McDonald's June 10 talk in Washington, he reported a curious new piece of information that had emerged from his conversations with Paul Trent. There had been a third witness, Paul Trent's father James, who lived nearby. James Trent has since died.

A third witness had never before been mentioned by Paul Trent in his many interviews. McDonald has a simple explanation for this oversight: "Nobody seems to have asked Paul Trent... He's very much like other rural area citizens who are rather taciturn and don't volunteer much comment and he apparently had never volunteered that his father had seen it from the yard down the way about a quarter of a mile. And he later showed the father the photo and the father, Paul Trent said, said that was the same thing he had seen," according to McDonald.

This is especially strange because Mrs. Paul Trent had told the Oregonian that in the middle of the sighting, she had run inside the house to call her mother-in-law but "she got no answer." Certainly at some time between May 11

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and the second week in June when Mr. and Mrs. Paul Trent were interviewed, one of them would have mentioned the exciting incident to the senior Trents and would have learned of their confirming sighting. When on June 9, Mrs. Paul Trent told the Oregonian reporter of having called her mother-in-law to tell of the sighting, surely she would have thought to mention that she later learned that her father-in-law had also seen the UFO. Yet the first disclosure of the third witness did not occur until nearly 20 years later, when McDonald thought to inquire.

McDonald summed up his views on the Trent photos in these words in his June 10 talk: "My impression is that here we have, probably, a genuine photo of an unidentified (flying) object."

But the Weather Bureau records for McMinnville indicate that the Trent photos with their overcast sky could not possibly have been taken on the evening of May 11, 1950, as claimed. If the Trents falsified the time of day, or date, of the incident, perhaps to explain why the "large craft" had not been seen by others, then it is not possible to accept the rest of their story or the authenticity of the photographs themselves.

Dr. Langmuir noted that one of the characteristics of scientific fantasies is that the "ratio of supporters to critics rises up to somewhere near 50% and then falls gradually to oblivion." While the scientific community in the U.S. and other countries has shown far better sense with respect to UFOs, a 1966 Gallup Poll indicated that 46% of the American public believed that UFOs were "real" rather than "imaginary."

Langmuir also noted that scientific fantasies "sometimes have lasted for fifteen or twenty years and then they gradually die away." Flying saucers have been with us for 22 years, having been "discovered" in 1947. Within the past year, the number of UFO reports submitted to the USAF and to major UFO groups such as NICAP and APRO has dropped off sharply. Membership in these groups also is down.

The fantasy of extraterrestrial visitors is such a captivating one to contemplate that it may never die out completely. But it will never again reach, or even approach, the zeniths of popularity and acceptance enjoyed in the mid-1950s and mid-1960s.

* * *

[1] "Doctor Wood," by William Seabrook. (Harcourt, Brace and Co., 1941.)

[2] "Pathological Science," by Dr. Irving Langmuir. Transcript of a talk to the GE Research Laboratory on Dec. 18, 1953. (Limited number of copies of this delightful talk are available from the General Electric Research and Development Center, Distribution Unit, Bldg. #5, P.O. Box 8, Schenectady, N.Y. 12301.)

[3] "Symposium on Unidentified Flying Objects," July 29, 1968. Hearings before the House Committee on Science and Astronautics. (U.S. Government Printing Office, 1968.)

[4] "Scientific Study of Unidentified Flying Objects," University of Colorado Study. (Bantam Book, 1968.)

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