Saturday Review

February 1, 1969 35¢

THE PULSE OF EARTH

EXPLORING THE AIR-WATER SEA

By John Lear

PARENT AND CHILD— THE HAZARDS OF EQUALI

By Thomas J. Cottle

A SCIENTIFIC STUDY OF UFOs

The University of Colorado Report

By EDWARD U. CONDON

THE emphasis of this study has been on attempting to learn from UFO reports anything that could be considered as adding to scientific knowledge. Our general conclusion is that nothing has come from the study of UFOs in the past twenty-one years that has added to scientific knowledge. Careful consideration of the record as it is available to us leads us to conclude that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby.

It has been argued that this lack of contribution to science is due to the fact that very little scientific effort has been put on the subject. We do not agree. We feel that the reason that there has been very little scientific study of the subject is that those scientists who are most directly concerned—astronomers, atmospheric physicists, chemists, and psychologists—having had ample opportunity to look into the matter, have individually decided that UFO phenomena do not offer a fruitful field in which to look for major scientific discoveries.

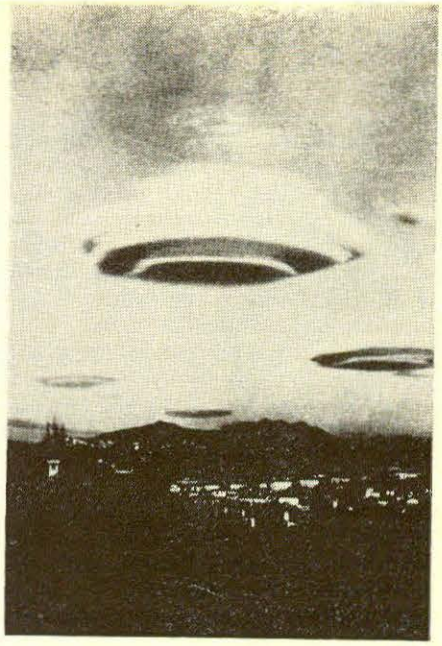
This conclusion is so important, and the public seems in general to have so little understanding of how scientists work, that some more comment on it seems desirable.

Each person who sets out to make a career of scientific research chooses a general field of broad specialization in which to acquire proficiency. Within that field he looks for specific fields in which to work. To do this, he keeps abreast of the published scientific literature, attends scientific meetings where reports on current progress are given, and energetically discusses his interests and those of his colleagues both face to face and by correspondence with them. He is motivated by an active curiosity about nature and by a personal desire to make a contribution to science. He is constantly probing for error and incompleteness in the efforts that have been made in his fields of interest, and looking for new ideas about new ways to attack new problems. From this effort he arrives at personal decisions as to where his own effort can be most fruitful. These decisions are personal in the sense that he must estimate his own intellectual limitations and the limitations inherent in the working situation in which he finds himself, including limits on the support of his work, or his involvement with other pre-existing scientific commitments. While individual errors of judgment may arise, it is generally not true that all of the scientists who are actively cultivating a given field of science are wrong for very long.

EVEN conceding that the entire body of "official" science might be in error for a time, we believe that there is no better way to correct error than to give free reign to the ideas of individual scientists to make decisions as to the directions in which scientific progress is most likely to be made. For legal work sensible people seek an attorney, and for medical treatment sensible people seek a qualified physician. The nation's surest guarantee of scientific excellence is to leave the decision-making process to the individual and collective judgment of its scientists.

Scientists are no respecters of authority. Our conclusion that study of UFO reports is not likely to advance science will not be uncritically accepted by them. Nor should it be, nor do we wish it to be. For scientists, it is our hope that the detailed analytical presentation of what we were able to do, and of what we were unable to do, will assist them in deciding whether or not they agree with our conclusions. Our hope is that the details of this report will help other scientists in seeing what the problems are and the difficulties of coping with them.

If they agree with our conclusions, they will turn their valuable attention and talents elsewhere. If they disagree it will be because our report has helped them reach a clear picture of wherein existing studies are faulty or incomplete and thereby will have stimulated ideas for more accurate studies. If they do get such ideas and can formulate them clearly, we have no doubt that support will be forthcoming to carry on with such clearly defined, specific studies. . . .



—*APRO.*

UFOs? No. Lenticular clouds, Brazil.

Some readers may think that we have now wandered into a contradiction. Earlier we said that we do not think study of UFO reports is likely to be a fruitful direction of scientific advance; now we have just said that persons with good ideas for specific studies in this field should be supported. This is no contradiction. Although we conclude, after nearly two years of intensive study, that we do not see any fruitful lines of advance from the study of UFO reports, we believe that any scientist with adequate training and credentials who does come up with a clearly defined, specific proposal for study should be supported.

What we are saying here was said in a more general context nearly a century ago by William Kingdon Clifford, a great English mathematical physicist. In his *Aims and Instruments of Scientific Thought* he expressed himself this way:

> Remember, then, that [scientific thought] is the guide of action; that the truth which it arrives at is not that which we can ideally contemplate without error, but that which we may act upon without fear; and you cannot fail to see that scientific thought is not an accompaniment or condition of human progress, but progress itself.

Just as individual scientists may make errors of judgment about fruitful directions for scientific effort, so also any individual administrator or committee which is charged with deciding on financial support for research proposals may also make an error of judgment. This possibility is minimized by the existence of parallel channels, for consideration by more than one group, of proposals for research projects.

In the period since 1945, the federal government has evolved flexible and ef-

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The adjacent text is from the opening pages of *Scientific Study of Unidentified Flying Objects*, a document copyright © by the University of Colorado and reproduced here by special permission of the University. The full text of Dr. Condon's report is available to the public as a Bantam book.

fective machinery for giving careful consideration to proposals from properly qualified scientists. What to some may seem like duplicated machinery actually acts as a safeguard against errors being made by some single official body. Even so, some errors could be made but the hazard is reduced nearly to zero.

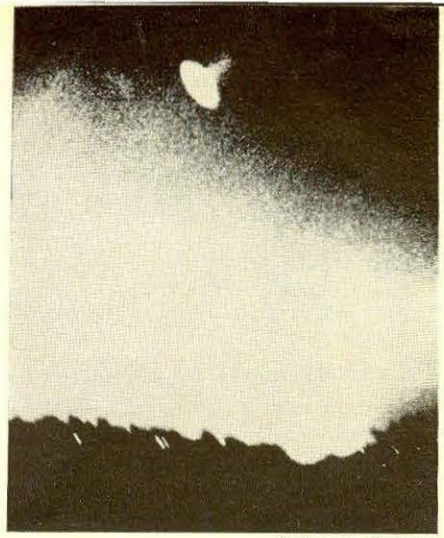
Therefore, we think that all of the agencies of the federal government, and the private foundations as well, ought to be willing to consider UFO research proposals along with the others submitted to them on an open-minded, unprejudiced basis. While we do not think at present that anything worthwhile is likely to come of such research, each individual case ought to be carefully considered on its own merits.

This formulation carries with it the corollary that we do not think that at this time the federal government ought to set up a major new agency, as some have suggested, for the scientific study of UFOs. This conclusion may not be true for all time. If, by the progress of research based on new ideas in this field, it then appears worthwhile to create such an agency, the decision to do so may be taken at that time.

WE find that there are important areas of atmospheric optics, including radio wave propagation, and of atmospheric electricity in which present knowledge is quite incomplete. These topics came to our attention in connection with the interpretation of some UFO reports, but they are also of fundamental scientific interest, and they are relevant to practical problems related to the improvement of safety of military and civilian flying.

Research efforts are being carried out in these areas by the Department of Defense, the Environmental Science Services Administration, the National Aeronautics and Space Administration, and by universities and nonprofit research organizations such as the National Center for Atmospheric Research, whose work is sponsored by the National Science Foundation. We commend these efforts. By no means should our lack of enthusiasm for study of UFO reports as such be misconstrued as a recommendation that these important related fields of scientific work not be adequately supported in the future. In an era of major development of air travel, of space exploration, and of military aerospace activities, everything possible should be done to improve our basic understanding of all atmospheric phenomena, and to improve the training of astronauts and aircraft pilots in the recognition and understanding of such phenomena.

AS the reader of this report will readily judge, we have focused attention almost entirely on the physical sciences. This was in part a matter of determining priorities and in part because we found rather less than some persons may have expected in the way of psychiatric problems related to belief in the reality of UFOs as craft from remote galactic or intergalactic civilizations. We believe that the rigorous study of the beliefs—unsupported by valid evidence—held by individuals and even by some groups might prove of scientific value to the social and behavioral sciences. There is no implication here that individual or group psychopathology is a principal area of study. Reports of UFOs offer interesting challenges to the student of cognitive processes as they are affected by individual and social variables. By this connection, we conclude that a content-analysis of press and television coverage of UFO reports might yield data of value both to the social scientist and the communications specialist. The lack of such a study in the present report is due to a judgment on our part that other areas of investigation were of much higher priority. We do not suggest, however, that the UFO phenomenon is, by its nature, more amenable to study in these disciplines than in the physical sciences. On the contrary, we conclude that the same specificity in proposed research in these areas is as desirable as it is in the physical sciences.



—William K. Hartman.

UFO? No. A street lamp flare.

THE question remains as to what, if anything, the federal government should do about the UFO reports it receives from the general public. We are inclined to think that nothing should be done with them in the expectation that they are going to contribute to the advance of science.

This question is inseparable from the question of the national defense interest of these reports. The history of the past twenty-one years has repeatedly led Air Force officers to the conclusion that none of the things seen, or thought to have been seen, which pass by the name of UFO reports, constituted any hazard or threat to national security.

We felt that it was out of our province to attempt an independent evaluation of this conclusion. We adopted the attitude that, without attempting to assume the defense responsibility which is that of the Air Force, if we came across any evidence whatever that seemed to us to indicate a defense hazard we would call it to the attention of the Air Force at once. We did not find any such evidence. We know of no reason to question the finding of the Air Force that the whole class of UFO reports so far considered does not pose a defense problem.

At the same time, however, the basis for reaching an opinion of this kind is that such reports have been given attention, one by one, as they are received. Had no attention whatever been given to any of them, we would not be in a position to feel confident of this conclusion. Therefore, it seems that only so much attention to the subject should be given as the Department of Defense

The National Academy of Sciences appointed a special panel to review Professor Condon's two-year study of UFOs. After analyzing the fifty-nine detailed UFO cases histories documented in his report, the panel concluded:

"We are unanimous in the opinion that this has been a very creditable effort to apply objectively the relevant techniques of science to the solution of the UFO problem. The Report recognizes that there remain UFO sightings that are not easily explained. The Report does suggest, however, so many reasonable and possible directions in which an explanation may eventually be found that there seems to be no reason to attribute them to an extraterrestrial source without evidence that is much more convincing. The Report also shows how difficult it is to apply scientific methods to the occasional transient sightings with any chance of success. While further study of particular aspects of the topic (e.g., atmospheric phenomena) may be useful, a study of UFOs in general is not a promising way to expand scientific understanding of the phenomena. On the basis of present knowledge the least likely explanation of UFOs is the hypothesis of extraterrestrial visitations by intelligent beings."

(For historical background, see SR, SCIENCE AND HUMANITY, Aug. 6, Sept. 3, Dec. 3, 1966; Feb. 4, 1967).

deems to be necessary strictly from a defense point of view. The level of effort should not be raised because of arguments that the subject has scientific importance, so far as present indications go.

It is our impression that the defense function could be performed within the framework established for intelligence and surveillance operations without the continuance of a special unit such as Project Blue Book, but this is a question for defense specialists rather than research scientists.

It has been contended that the subject has been shrouded in official secrecy. We conclude otherwise. We have no evidence of secrecy concerning UFO reports. What has been miscalled secrecy has been no more than an intelligent policy of delay in releasing data so that the public does not become confused by premature publication of incomplete studies of reports.

The subject of UFOs has been widely misrepresented to the public by a small number of individuals who have given sensationalized presentations in writings and public lectures. So far as we can judge, not many people have been misled by such irresponsible behavior, but whatever effect there has been has been bad.

A related problem to which we wish to direct public attention is the miseducation in our schools which arises from the fact that many children are being allowed, if not actively encouraged, to devote their science study time to the reading of UFO books and magazine articles of the type referred to in the preceding paragraph. We feel that children are educationally harmed by absorbing unsound and erroneous material as if it were scientifically well founded. Such study is harmful not merely because of the erroneous nature of the material itself, but also because such study retards the development of a critical faculty with regard to scientific evidence, which to some degree ought to be part of the education of every American.

Therefore, we strongly recommend that teachers refrain from giving students credit for school work based on their reading of the presently available UFO books and magazine articles. Teachers who find their students strongly motivated in this direction should attempt to channel their interests in the direction of serious study of astronomy and meteorology, and in the direction of critical analysis of arguments for fantastic propositions that are being supported by appeals to fallacious reasoning or false data.

We hope that the results of our study will prove useful to scientists and those responsible for the formation of public policy generally in dealing with this problem which has now been with us for twenty-one years.

—*Grace Marmor Spruch.*

Edward Condon: "A fiercely principled and anti-diplomatic . . . man."

PERSONALITY PORTRAIT—CVIII

Reporter Edward Condon

WHAT kind of man is the one who undertook the independent scientific study of UFOs—a subject most scientists wouldn't touch with a 100-foot pole? If, as most scientists believe, UFOs are "a lot of nonsense," "products of overactive imagination glands," "not susceptible to calm and serious study," and clouded with suspicion because "too many kooks are chasing them," what kind of man would be *asked* to conduct an independent scientific investigation?

The answer to the second question is easy. Only a truly distinguished scientist could be considered for such an assignment: a man of impressive stature, able to impart dignity to the project and give weight to whatever conclusions might be reached.

Edward Uhler Condon is indeed distinguished: former director of the National Bureau of Standards, former president of the American Physical Society, former president of the American Association for the Advancement of Science, former director of research for Corning Glass and for Westinghouse Electric, present member of the august National Academy of Sciences of the United States and of several national academies abroad, scientific adviser to the first U.S. Senate committee on atomic energy, co-author of a thirty-year-old classic on atomic physics, co-author of the best available one-volume handbook of physics, now professor of physics at the University of Colorado and formerly professor at Princeton, Minnesota, and Washington University in St. Louis. In addition, Condon and R. W. Gurney (and the late George Gamow, independently) were the first to give a theoretical interpretation of radioactivity, one of the most important physics problems of this era.

What kind of man is Condon? The answer to this question is much more complex. He is different to different people, perhaps as a function of their differences from each other and from him. The composite Condon is a moral, impassioned man, with a depth of concern for mankind not common in scientists; a man fiercely principled and anti-diplomatic; a man who believes and feels in sharp contrasts, who will let the world know his position without ambiguity. Fuzzimindedness is anathema to him and he insists on saying so at every opportunity. But this rasping trait is wedded to an extreme generosity and kindness. Throughout his life he has given freely of his time, his counsel, his finances, and his home. During his years at the Bureau of Standards, the attic of his home in Washington was a dormitory for young scientists hounded by the Un-American Activities Committee of the U.S. House of Representatives.

Condon is sixty-six years old, wears spectacles and a gray crew haircut. Tall, somewhat stout, he gives the impression of a vertical ellipsoid. When I remarked on this, he commented: "I recently lost twenty pounds and am now more ec-

centric than ever." In this he revealed enjoyment of mathematical quips, for the eccentricity of an ellipse measures its departure from circularity. Condon is in no sense circular.

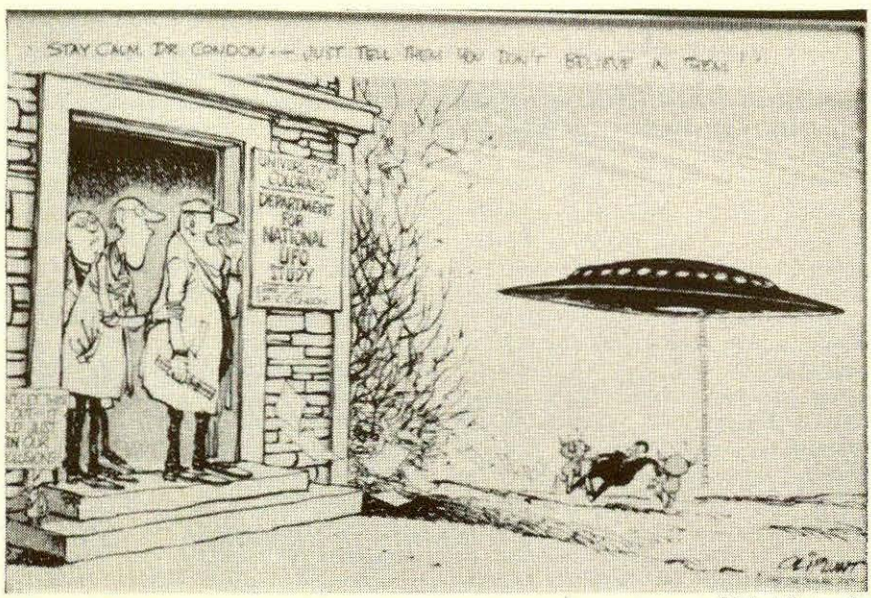
In describing Condon, people use phrases like "prickly integrity," "blockbuster," "huge hunk of granite." How one takes him depends upon the thickness of one's hide and one's own sense of integrity. Dr. Gerald Oster, of New York's Mt. Sinai Medical School, met Condon when Oster was a graduate student working on a summer project at Westinghouse. Condon was associate director of research there. "It was hot," Oster recalls, "and Condon came in eating an ice cream cone. He started talking to me about what I was doing. I said I'd write a report for him. 'Oh no, I'll never read it,' he said. So we talked. I had found some sort of temperature effect. A pattern of electromagnetic waves was displayed on an oscilloscope, and when I changed the temperature there'd be a change in the frequency distribution. I thought I had a great way to measure frequencies. Condon didn't treat me like a student. He spoke to me as an equal. 'Are you crazy?' he said. 'Do you know how accurately we can measure frequencies today?'" Oster found this "equality" wonderful. Less confident people might cringe.

Condon's formidable intellect crackles like Rocky Mountain lightning. He gives others the feeling that he would like their minds to crackle, too; if they cannot manage to scratch up a spark, there is all-around disappointment.

Perhaps Condon's most salient feature is his humor. Once, when he was testifying before a congressional committee on appropriations, a Congressman berated him for allowing expensive machines in the Bureau of Standards to lie idle. Condon could not refrain from drawing on immediate experience. He testified that he had just visited the men's room where there were six toilets. Only one toilet was being used because the room had been "designed for peak load."

Condon's sense of humor might have been a factor in his taking on the UFO study. He did not seek the project. He had to be persuaded, the most appealing argument to him being that the study would be a public service. Condon has a long record of public service. He has written and lectured on the responsibility of scientists to society, and is currently president of the Society for Social Responsibility in Science.

Almost before the project could get off the ground the controversy over UFOs infected the project itself. With all the talk of cross-fertilization these days, and the word "interdisciplinary" edging in and out of conversations, one would think that an investigation of UFOs would be an ideal focus for different disciplines, for each to contribute its special knowledge. Physical scientists would bring their knowledge of natural phenomena, meteorology, the ability to calculate what is possible and what is not, according to the laws of physics. Psychologists would bring a knowledge of perception, how the human senses react to different stimuli and how the brain interprets these reactions, and possibly a knowledge of emotional responses: what type of person will react in which way to which stimulus. A coordinator would organize the data and develop a coherent picture from isolated bits. A team so constituted would seem to be a whole greater than the sum of its parts—provided that the members of the team were united on the goals and the function of the project, and the manner in which it should be conducted.



—*Oliphant-Denver Post.*

The cartoon above adorns a wall of Edward Condon's office.

And there's the rub. The interpretation of the UFO project's aims by some of the investigators was not the interpretation of the project's director.

The project's assigned objective was to determine whether the Government should continue to finance the chasing of "flying saucers" in the interests of science. The Air Force had long since reached the conclusion that UFOs did not represent a national security hazard.

BEFORE the study began—even before the University of Colorado agreed to accede to the urgent pleas of the Air Force that Condon be encouraged to direct the investigation—the man who later turned out to be administrative coordinator of the project for Condon wrote a memo that he thought would be read only by members of the Colorado administrative staff. The memo's author, Robert J. Low, was then assistant dean of the Graduate School. At the time he wrote the memo he was aware, and knew that some of the faculty members were also aware, that other universities had turned down the UFO project and that eminent scientists on the Colorado campus opposed Colorado's involvement on the grounds that laymen would interpret acceptance of the study contract to mean that Colorado as an institution believed in the possibility that UFOs might be extraterrestrial vehicles. Low therefore tried to state in the memo the question of whether the scientific method could possibly prove a negative hypothesis. If extraterrestrial vehicles did not exist, could anyone prove they did not? His phrasing proved unfortunate when the memo was circulated outside the staff and was published in part in a *Look* magazine article signed by John Fuller, who had earlier published UFO reports in TRADE WINDS in *SR*. The excerpt that appeared in *Look* read as follows:

> The trick would be, I think, to describe the project so that, to the public, it would appear a totally objective study but, to the scientific community, would present the image of a group of nonbelievers trying their best to be objective but having an almost zero expectation of finding a [flying] saucer.

The lay readership of *Look* could not be expected to understand that the excerpt began with what is virtually a household phrase among scientists. "The trick is to . . ." means only *the way to do it is* and connotes no deceit. The phrase is used in connection with solving an equation, for example. One might say, "the trick is to solve for x first, then for y." But when the phrase was linked with a supposed intention to give the public one impression and the scientific community another, the effect was bad.

Condon has never been known to give the public one impression while giving

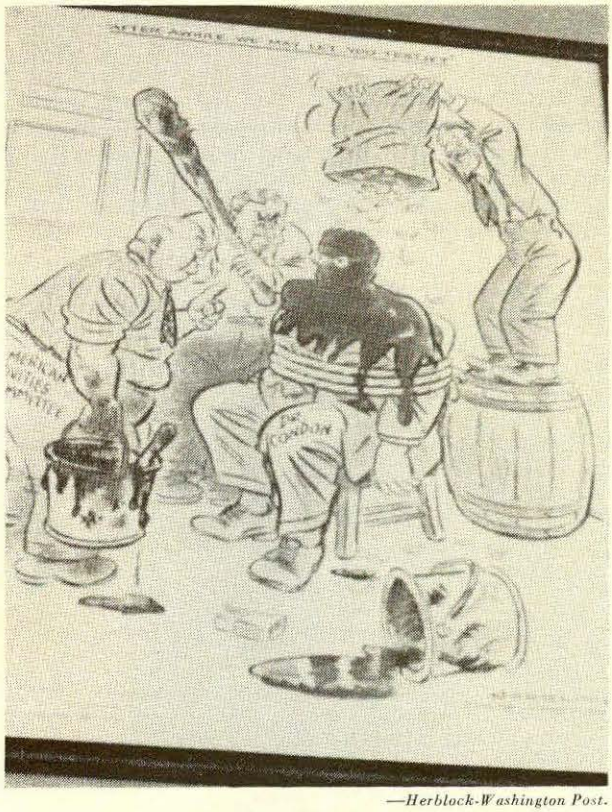
the scientific world another. He has, if anything, been too candid all around. He never pretended to believe in UFOs. He told several different reporters he was agnostic on the subject. However, being an accomplished *raconteur*, Condon delighted in telling some of the more amusing UFO stories, giving some the impression (before he completed his study) that he was biased against UFOs. Condon was skeptical, as one would expect a scientist of his caliber to be. But skepticism is not the same as bias. A scientist is perfectly capable of objectivity while being skeptical. All his training is geared to that end. He doesn't mindlessly putter around to see what he can come up with. Most of the time he has an idea, which he then tests. He knows where he is going before he starts out, though he may have to change direction as he gets more data. He is open-minded, not empty-minded.

In the beginning, Condon won praise from UFO buffs because of the presence on his study staff of several persons sympathetic to the extraterrestrial vehicle explanation for UFOs. Later, the National Investigations Committee on Aerial Phenomena broke with Condon because his staff investigated "only half of 1 per cent" of the UFO sightings claimed by NICAP. A paperback book titled *UFOs? Yes! Where the Condon Committee Went Wrong* (New American Library) was started toward press after Condon discharged two of his investigators on the heels of the removal of the Low memo from the files. The co-author of the book, who tells the story in first person narrative form to Colorado newsman R. Roger Harkins, is one of the discharged pair, psychologist David R. Saunders.

CONDON points out that Saunders left the Colorado project before any of the final report had been written, hence what Saunders has to say must be judged in that context.

Saunders, who continues on the Colorado faculty, told me he feels we must "weight the probability" of UFOs being extraterrestrial vehicles. That is, if there is one chance in a billion that something will occur, but that occurrence might have dire consequences, then we must treat it as if it were much more probable than one in a billion. We must multiply the actual probability by a factor proportional to the danger. In UFO terms, if the chances are one in a billion that they are products of extraterrestrial intelligence, but if that intelligence can destroy our civilization, then we must invest heavily to find out all about them in order to protect ourselves.

I asked Dr. Saunders whether the situation regarding evidence that UFOs are products of extraterrestrial intelligence might be compared to the law in different countries. In France a man is guilty until he is proven innocent; here he is innocent until proven guilty. The latter would correspond to Condon's view that the burden of proof has to lie with those who believe UFOs are extraterrestrially directed. Saunders replied: "There is a third alternative—a legal system in which, if a man is charged, there is a greater presumption for that charge than if he had not been charged." One then has to search for the evidence, he maintained; for, if the man were held innocent until some evidence came to light, one might miss the evidence by not searching for it diligently enough.



—*Herblock-Washington Post.*

Another cartoon displayed in Condon's office.

Condon was furious over Saunders's participation in the *Look* attack. He left the impression with some people that he might not have survived the UFO study if it had not entailed some lighter moments. One involved Snippy, a three-year-old Appaloosa horse found dead and partly stripped of flesh on a ranch near Alamosa, Colorado. Some Alamosa residents claimed the horse had been dispatched by visitors from outer space. Mounting pressures led Condon to send investigators. Two bullet holes were found in the carcass. When Condon was asked what his team had concluded after examining the horse, he said, "It stank." But Snippy brought a lot of tourist trade to Alamosa, and his bones have been mounted for display by the Chamber of Commerce.

At a dinner in Denver, an official function where the guests included the Governor of Colorado and his lady and some top military brass, a woman very prominent in public affairs ignored everyone else and latched onto Condon. She insisted upon being seated next to him at dinner and, monopolizing him entirely, fired UFO questions at him.

"What do you think of Clarion?" she asked. Condon had never heard of Clarion. It seemed that some people believe that extraterrestrial intelligence makes its headquarters on Clarion, a hypothetical planet which they suppose is the same distance from the sun as Earth is, but on the other side, behind the sun, so that it cannot be seen from Earth. (The time required to traverse one orbit around the sun depends, by Newton's laws, only upon the distance from the sun, and since Earth and Clarion are supposed to be at the same distance, they will have the same period of revolution about the sun, one year. Therefore, once behind the sun, Clarion would supposedly remain behind the sun from Earth's point of view, and would never be detected.) Some believers think UFOs are sent out from Clarion.

Condon pointed out to his persistent questioner that all of the astronomers' precise calculations and predictions of the movements of the planets are based on a solar system that contains no Clarion. If Clarion were to exist it would perturb the motion of the other planets; likewise, the presence of all the other planets would perturb the orbit of Clarion. One could calculate the size of

these effects, and how long it would take for them to be observed.

"Are you sure, Dr. Condon?" the woman insisted. "Have you ever computed it yourself? I think you should compute it yourself."

This was an enjoyable assignment for Condon, putting an intriguing idea to the scientific test. This type of problem had already been programed for computer, and needed only minor modification to apply to Clarion. It was computed for the Colorado UFO project at the Naval Observatory. The result disclosed that if there were a Clarion hiding behind the sun, an anomalous motion of Venus could be detected in about three months. Because of the interaction of all the planets, Clarion itself would emerge from behind the sun in roughly thirty years. Condon dispatched his findings to his dinner partner. Back came a lamenting reply, "That's what I dislike about computers. They always destroy one's fondest illusions."

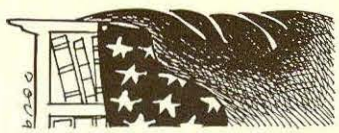
THE UFO controversy is hardly the first one in which Condon has been embroiled. The norm for his whole life is atypicality. A good fraction of America's outstanding scientists of Condon's generation were born in Europe and emigrated to this country. Condon was born in Alamogordo, New Mexico, four years after the town was settled. (Forty-three years later it was to be the site of the first atomic bomb explosion.) Most scientists come from stable, middle-class homes. Condon's father had run away from home in his teens to become a self-made civil engineer, interested in railroad building. Condon's parents separated when he was six, and Edward didn't see his father again until the boy was twelve. Edward and his restless mother moved from town to town in the West, gleaning for him an elementary education from fourteen different schools.

Condon describes himself as a soft, fat boy, "a great patron of the public library." The closest he came to athletics was to run from all forms of it. At sixteen he became a reporter, switching from newspaper to newspaper in the San Francisco-Oakland area. It was easy, he claims. The time was World War I. The experienced reporters were in the Army. Newspapers were desperate for staff. He attended school in the morning, worked on the paper in the afternoon, and helped out in his mother's grocery store at night.

The short, snappy life of Edward U. Condon as a newspaperman lasted three years. It contained an incident that, if it were in a play, would have the critics crying "contrived." But the director of our lives, of Condon's at least, has a strong sense of irony, and did not deem it too contrived that Condon should be, at sixteen, on the smearing end of a smear campaign of the same kind that would cause him much anguish later.

At the end of World War I, during one of the more violent attacks of red hysteria this country periodically suffers, at the time of the Palmer raids, sixteen-year-old Condon was working for the Oakland *Enquirer*, covering unions. For want of any other news one Sunday, he covered a state organizational meeting of a left wing group that had split from the Socialist party. The meeting was not exciting; it was somewhat dull in fact, full of parliamentary procedures and organizational matters. Then someone removed the maroon cloth covering the piano and everyone joined in some songs. Condon wrote a three-inch story on the meeting, which he anticipated would be buried on page 10. But his editor had no other news for the day, and saw possibilities in the little item. The California legislature had just passed a state law defining "criminal syndicalism," which had not yet been tested.

By the time the story got to the front page, which is where it got to, the maroon piano cover had turned red, and the headline read, RED FLAG SHROUDS AMERICAN COLORS. Where had the "American colors" come from? There had been an American flag on a bookcase substituting for glass doors to keep dust from the books. When the maroon cloth had been removed from the piano, it had unthinkingly been placed on the bookcase, covering the flag.



Eleven of the men who had taken part in the dull Sunday political meeting were arrested and charged with criminal syndicalism. There were trials. Condon was the principal state's witness. Some of the accused went to San Quentin Prison. Others jumped bail and fled the country. Lives were ruined. When, sick at what his attendance at the little Sunday meeting had come to, Condon tried to set the record straight, and in testimony changed the red flag back to the maroon piano cover, it was too late.

Emilie Honzik Condon, Edward Condon's wife, weighed eighty-five pounds when they met at the Oakland *Tribune*, where she worked as the *Tribune's* information service, answering questions readers phoned in. She, too, had a hard beginning, with much work and little food on the Oregon farm on which her Czech parents had settled. The nearby town had no high school, so Emilie went to an out-of-town high school as well as to college, doing housework for her room and board. The two were married when Condon was twenty and a sophomore at the University of California in Berkeley. While his interests were always in math and the physical sciences, hers were in history and Slavic literature, particularly Czech. This was to be held against them later.

Condon had to take an extra term of compulsory ROTC in college, having flunked one term for "a little act of insubordination." Since then the military has (until now) had more difficulty with Condon. In *The New World, the History of the United States Atomic Energy Commission,* by Richard G. Hewlett and Oscar E. Anderson, Jr., in a section on the director of the atomic bomb project at Los Alamos, it is stated: "Oppenheimer's position became more difficult when Edward U. Condon, who had been brought from the Westinghouse Research Laboratories to be associate director, clashed with the military authorities and left the project." The clash was with General Leslie Groves, who wanted the project's scientists to be assigned military ranks: Oppenheimer to be a colonel, associate professors to be majors, etc. Condon objected violently, and won. The scientists remained civilians. But he had made enemies.

When the atomic bomb was dropped on Hiroshima, Condon had to read about it in the papers. He was stunned. He was back at Westinghouse by that time. Although he had worked on one aspect of the bomb at the University of California, the work had been so removed from the engineering of an actual bomb that he and some of his colleagues had blocked out awareness of the culmination of their work. They knew they were working on a bomb, but they erased the thought that some day it would be dropped.

A couple of days after the Hiroshima explosion, Condon lay awake all night thinking about the bomb in a way he had not thought about it before when it had been essential to produce one before the Germans produced one. He became anxious about the future of civilization. The next morning he wrote an article on his first thoughts on the social and political problems of atomic energy. That day the Nagasaki bomb fell.

Condon kept writing and speaking. He and some scientist colleagues organized what he called "the largest scale lobby-job ever put on by a bunch of rank amateurs." He teamed up with the late Leo Szilard (one of three distinguished scientists who helped persuade President Roosevelt to sponsor the atomic bomb project) for appearances before congressional committees. When the Senate Committee on Atomic Energy, sponsoring the McMahon Bill for civilian control of atomic energy, sought a scientific adviser, Condon was selected. And his enemies multiplied.

In November 1945, on the day his appointment to the Senate committee

post was announced, he was named director of the National Bureau of Standards by President Harry Truman on the recommendation of Henry A. Wallace, then Secretary of Commerce.

THE rest is history. The military lost the battle for atomic energy. An unidentified person wrote to the Joint Congressional Committee on Atomic Energy in 1946, suggesting it look into the FBI file on Condon. Representative J. Parnell Thomas, who later served a term in prison for payroll padding, was then head of the House Un-American Activities Committee. Thomas wrote two magazine articles stating, in essence, that Condon was someone to watch. Condon asked to appear before Thomas's committee to answer questions. He was not called, but the committee launched an investigation. At Condon's request, the loyalty board of the Department of Commerce initiated a parallel investigation while W. Averell Harriman was Secretary of Commerce. That board cleared Condon of any suspicion of disloyalty. Thomas then made a statement calling Condon "perhaps one of the weakest links in our atomic security." The accusation was published on Condon's birthday, March 2, which his family has ever since celebrated as "National Weak Link Day." Condon repeatedly asked to testify on the charges against him, but was not given the opportunity until 1952, a year after he had resigned from the Bureau of Standards "to take a better position in industry." Then, he denied the charges under oath. Five months later his clearance was revoked. This revocation was appealed. Limited clearance was restored and again revoked. Condon was then director of research and development at Corning Glass. In December 1954, Corning issued a statement that Condon would make no further effort to:

> maintain a clearance status which will give him access to classified government information. . . . He recognizes that his continuance in an uncleared status impairs his usefulness to the company as director of research and development. He has therefore voluntarily tendered his resignation.

Condon's own statement said that in July 1954 the Eastern Industrial Personnel Security Board had found him entitled to full clearance in connection with work at Corning. This finding had been reported in the press on October 19. On October 21 Secretary of the Navy Charles Thomas announced that he had asked the board to reconsider and had suspended the clearance. Condon's statement continued:

> At the present time I do not feel there is any possibility of my securing a fair and independent judgment in a reconsideration of the decision of the Eastern Industrial Personnel Security Board of last July in favor of my security clearance. I am now unwilling to continue a potentially indefinite series of reviews and rereviews. I have therefore withdrawn my application for clearance with the satisfaction that an objective and unbiased board which has conducted a complete hearing in this matter, which is also the highest board established by the three military departments for this purpose has, after hearing me and studying the full record, decided that I am entitled to full clearance.

There followed a two-year period that newspapers fill in with references to his having moved to California to work on theoretical problems. "I was unemployed," states Condon flatly. Several offers to be chairman of university physics departments and one to be dean of a graduate school fizzled out under the pressure of his outcast state.

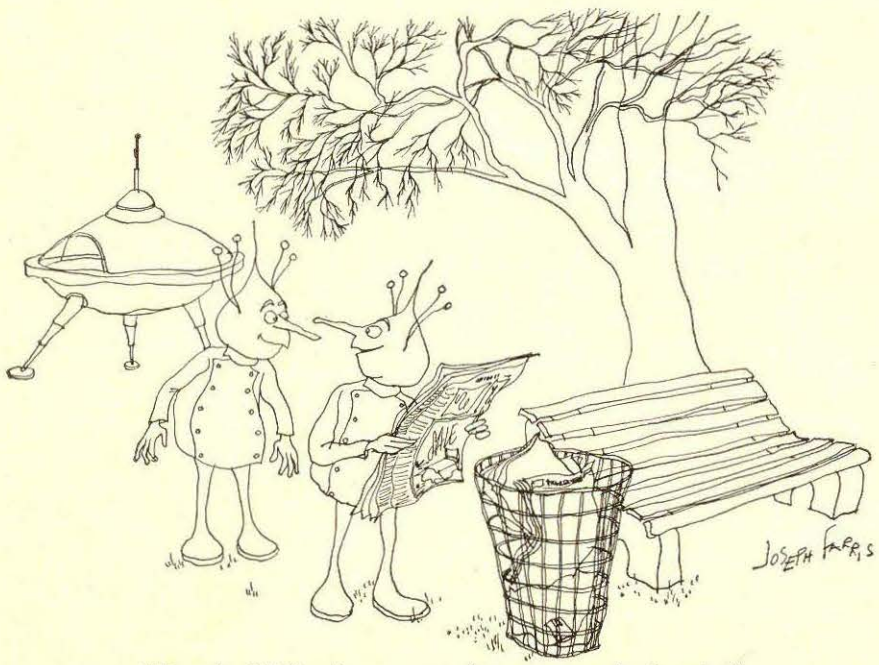
Scientists overwhelmingly backed Condon. Several months after he left the Bureau of Standards he was designated president-elect of the prestigious American Association for the Advancement of Science. When he was installed as president a year later, he received a tremendous ovation.

IN 1962, when the nation celebrated Colonel John Glenn's space flight, some newspapers pointed out that it was also a great day for Condon, for he had contributed one of the most important ingredients to Glenn's success—the heat-resistant rocket nose cone. In 1954, the Navy had asked Condon, as research director at Corning, to develop the cone. The laboratory had succeeded, and the nose cone had been driven from Corning to Washington by station wagon. This was at the time Secretary of the Navy Thomas had suspended Condon's clearance, and the Navy refused to accept the cone. Condon remarked that he already knew the secret of the nose cone since he had been in charge of the lab that had developed it, "and you can't put the egg back into the chicken." The Navy still refused. Three weeks later the nose cone was sheepishly accepted.

Two of the young scientists who had been inspired by Condon's courage during the Bureau of Standards unhappiness were instrumental in his joining the staff at Colorado. One is Professor Richard N. Thomas, the other Professor Lewis Branscomb, head of JILA (Joint Institute Laboratory of Astrophysics). Condon's office is on the top floor of the JILA building, the tallest building on the university's campus. His windows afford a magnificent view of the campus, the Rocky Mountains beyond, and anything that comes in out of the skies. He doesn't expect to see any flying saucers.

"I would love to discover there are visitors from outer space if there are, but I would hate to declare that they exist if they do not," he told me. "It is really too important a matter to deal with in a trivial and irresponsible way. The project members looked for positive evidence in every way they could think of, and found none. This does not prove that extraterrestrial beings are not visiting Earth, but leaves us without positive evidence that they are." Then he added: "I hope people will read the report before deciding whether they like it or not."

—GRACE MARMOR SPRUCH.



"Hey, look! Here's a report that says we don't exist."

Grace Marmor Spruch holds a doctorate in physics. Now a free-lance science writer, she has been associated with New York University as a research scientist.