Saucers and Science

by PETER F. SHARP

IT has become a very popular pastime in the pages of the FLYING SAUCER REVIEW to bait and criticise the scientist and the scientific method. Much of the criticism reveals a complete lack of understanding of the way in which science works, so a short outline of the methods of science and their value to UFO research may help to eradicate some of the more common misconceptions and give a clearer picture of the misunderstood men in white coats and the methods they use.

Perhaps the most remarkable thing about the scientist is that in all probability during his training he never received any instruction in the scientific method as such. He learns laboratory techniques, basic laws, and theories, and may be encouraged to criticise his own results and the theories he is taught, but seldom does his course include lectures on the scientific method or scientific philosophy. This is something that it is tacitly assumed he understands and it is partly due to this reason that so many scientists are mere technicians, competent only to perform operations that they have learnt during their education.

The life blood of science is research—the attempt to discover the laws governing a set of phenomena and the explanation of these laws by theories. The theories themselves suggest further experiments that produce evidence which may result in the theory being modified or rejected completely. The ultimate objective is the complete understanding of the physical structure and operation of the universe. Scientific laws are the framework on which all theories and the majority of experiments are based, and for our purpose we may define a scientific law as the precise description of the behaviour of matter under a stipulated set of conditions. The test of laws is observation and experiment, and a law is held to be valid until these tests consistently indicate that the law is incorrect.

Two fundamental methods

Investigation is carried out mainly by two fundamental methods or by some combination of these. The purest method is that adopted by the theoretician who studies the empirical laws established by observation and seeks a generalisation, a theory, that will correlate all the laws. The prime test of the theory produced is that it shall explain all the laws, but the theory is largely valueless unless it can predict new laws for which suitable experiments can be designed. If the experiments confirm the predictions the theoretician may pat himself on the back and proceed with a wider generalisation. Einstein's theory of relativity falls into this class; it explained existing laws and predicted new ones that have subsequently been confirmed. The weakness of the theory does lie, however, in the relatively few experiments that can be designed to verify its predictions. It is for this reason that there was so much excitement in scientific circles about the recent experiments conducted at Harwell and in the United States which enabled a gravitational red shift to be measured and thus test a prediction of the General Theory of Relativity.

The second point

The second fundamental approach is that of the observational scientist. The majority of scientists involved in research fall into this category. A set of data is examined and relationships are sought between various features. The relationship is extrapolated into a region not covered by the data and then fresh observations are sought to test the extrapolation. The results obtained usually mean a modification of the original relationship and a modified extrapolation is then made and the whole process repeats itself. Thus research is seen to proceed by successive approximations. Finally a law is formulated which is strictly valid only over the range of values covered by the data and is empirical and remains so until it is explained by an accepted theory.

One does not have to be a scientist to appreciate that science has made great advances in our understanding of the universe and appears to be adding to our knowledge at an ever-increasing rate, but does science give us a full understanding of reality, are there branches of knowledge to which the scientific method cannot

be applied? We begin to approach deep waters when this topic is broached, but in general terms we can readily appreciate that the scientific method is not the panacea for the complete understanding of the world. Take art, music and humour; the methods of scientific analysis and dissection can tell us certain facts about all these but in the process something indefinable is destroyed. The humour of the joke and the beauty of the music and painting is lost—is there anything more painful than hearing a joke explained to a dull-witted person?

Reality, then, is something more than the bare bones that science gives us and we remember Pascal, "The heart has reasons of which the reason knows nothing."

Science must communicate

There are other means of acquiring an appreciation of reality such as mystical experience and intuition; these are intensely personal experiences and are incapable of being communicated fully to others. The findings of science can, and must, be communicated and lose nothing of value in the process, and in this respect are more universally valid than subjective experience. Nevertheless, the mystic always says "I Know," whereas the scientist can only say "I know."

Before we become lost in a maze of metaphysical speculation let us return to UFO phenomena. Can the scientific method be applied in this case and if so how? The answer to the former question is a most emphatic yes as the application of the method has already given some startling results. The approach may be in several ways, two being illustrated below.

The scientist when confronted with a spasmodic and seemingly unpredictable phenomenon examines the sighting reports and looks for a pattern or law of behaviour. Aimé Michel has done just this. He applied the scientific method to the observational evidence for UFOs and from the chaos of reports in France in 1954 discovered orthoteny, the most starting and significant discovery in the whole field of UFO research to date. The next step will be the examination of past and/or future sightings for this same pattern of behaviour. If it again emerges we may well see a far larger number of scientists considering UFOs as a suitable field for scientific enquiry.

Aimé Michel's fellow countryman, Lieut. Plantier (one can appreciate why the French have a reputation for being logical) applied a more theoretical approach. He had the germ of a theory of gravitational propulsion in his brain and saw in the UFO reports indications that the objects might be using such a means of propulsion. His theory made certain predictions of UFO performance which have since been verified. It was remarked earlier that research proceeds by a series of approximations, that is, a theory is dynamic, hence Plantier's theory must be studied, criticised and tested again and again so that its limitations and possibilites may be found. If this is carried out we may safely anticipate that further important results will emerge from the theory.

A well-known argument

One of the universal characteristics of the scientifically trained mind is its scepticism of unverified speculations. Until tests can be devised and have been applied the scientist will not, and indeed cannot, commit himself if he is to speak scientifically. As is often pointed out in FLYING SAUCER REVIEW, scientists do sometimes speak unscientifically but it is illogical to deduce from this that the scientific method itself is at fault. We know that a specialist may be a man of wide culture but he cannot make dogmatic statements about other fields of science as he fully knows only his own (and in fact his specialist knowledge may even colour his opinion). This argument is well known to the readers of the REVIEW. However, although those specialists who poor-pooh UFOs are held up for ridicule in the REVIEW, those specialists who are equally unqualified to make ex cathedra pronouncements on UFOs, yet who believe that UFOs exist, have praises heaped upon them.

Subjective judgments

In the leader of the May/June issue the Editor justifiably rails against those scientists who rushed to give seemingly subjective judgments on UFOs. Whilst not trying to defend those scientists, may I point out that the REVIEW falls into the same trap. I quote from the leader:

"We have noticed that those who are spiritualists tend to view the mystery in terms that belong to spiritualism. Those who are extra-dimensionalists already are those who apply their theories to the saucers—and so on."

Yet on page 14 of the same issue when discussing the mystery submarine seen off Argentina it was stated:

"Why can't it be admitted that the whole thing is a complete mystery . . . and that by treating the matter as just one piece of a vast jig-saw puzzle try to fit it in and so complete the picture of the greatest twentieth-century conundrum: Are we alone in the universe?"

Surely here we have the ufologist applying a

subjective judgment to a phenomenon that has only one similarity with his own phenomena, that of being mysterious? The two may or may not be related but in the absence of evidence for the former would it not be better to consider the submarine separately from UFOs?

Speculation not evidence

Incomplete understanding of the scientist's mind has lead to the impression that the scientist has been dragged kicking and screaming to the recognition that we are very probably not alone in the universe. One has only to read the popular scientific writers of the last hundred years (Sir Robert Ball, Sir James Jeans, etc.) to see that the scientist has been speculating on the possibility of life in the universe all along. But speculation, even by scientists, does not constitute evidence and what we have seen in the last three decades has been the accumulation of evidence that planetary systems are not rare phenomena as previously thought but occur throughout the entire universe frequently. Such a prevalence of planets implies a very high probability that somewhere in the universe there is intelligent life. This was forcefully stated by Dr. Harlow Shapley in an article for the *Sunday Times* in April, 1956; he stated that Man must now adjust himself to accept the fact that he is not alone in the Cosmos just as he had to adjust himself to previous revolutions in thinking such as the overthrow of the geocentric concept of the universe by Copernicus.

We have seen that it is valid to apply the scientific method to UFOs just as the Society for Psychical Research applies it to analagous phenomena. We must have patience, for science feels its way, slowly checking everything; hypotheses are valueless if built on weak foundations. Above all let us remember Thomas Huxley's advice: " sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses nature leads, or you shall learn nothing."

Waiting for a space message:

another scientist wakes up

IN 1959 Morrison and Cocconi made the suggestion (in an article in *Nature*) that there might be advanced societies elsewhere in the Galaxy who are beaming transmissions to us at a frequency of 1,420 megacycles. In the May 28, 1960 issue of *Nature*, Professor R. N. Bracewell, of the Radioscience Laboratory, Stanford University, California has returned to the subject with a learned article discussing the possibilities. He makes a number of interesting remarks during the course of the article.

In the first place, he warns that we should be on the alert to receive such inter-stellar signals: " We must avoid relegating them, if they are there, to the fate of the very strong emissions from Jupiter (of the order of 1,000 megawatts per megacycle) which were heard and ignored for decades."

Professor Bracewell goes on to suggest that the superior intelligences may have been attempting to contact the earth for the last thirty years and that they may even have sent out a robot " peace dove " rocket with an electronic brain which could carry on a two-way radio talk with us and relay our signals to distant galaxies. He suggests that, in order to ensure use of a wavelength that could both penetrate our ionosphere and be in a band certain to be in use, the probe could first listen for our signals and then repeat them back.

" To us its signals would have the appearance of echoes, having delays of seconds or minutes, such as were reported thirty years ago by Stormer and van der Pol and never explained."

Professor Bracewell concludes his essay by remarking that " the prospect of catching a technology near its peak might be a strong incentive for them to reach us."

Nature is perhaps the scientists' most authoritative journal and the remarks we have quoted will command a respectful hearing. Professor Bracewell's article marks yet another milestone along the road to realisation that we are not alone in the universe. The day cannot be far distant when the wide breach between the pundits and the public has been closed. At the moment the learned professor is prepared to listen for messages from outer space, while those, less renowned but equally reliable, have to face ridicule and disregard for their accounts of events that have taken place in our own atmosphere.

PRACTICAL STEPS

to encourage visitors from space

suggested by

JOHN M. LADE

NEWSPAPER references to the possibility of other intelligent beings inhabiting the universe are becoming more frequent. The London *Daily Telegraph* of January 6, 1960, carried a front-page article entitled "Scientists to Seek Life in Outer Space," describing the American space-radio monitoring plan named Ozma: "Oz was the far-off and inaccessible place where Ozma was queen and where the wizard came from." Quoting further: "Two physicists from Cornell University recently presented in *Nature* the argument that other inhabitants of the universe would try to communicate first by radio waves. One of the physicists, Professor Philip Morrison, has just visited Imperial College, London. He said . . . such communities would try to establish a link, and then pass on technical advice about how to improve reception. Before any advanced kind of language had been arranged, they would be transmitting pictures to us. "I suppose the signals will lead from mathematics to language via pictures," the professor added.

Space travel achieved

Those who have accepted the reality of flying saucers, studied the evidence for the extra-terrestrial source of these craft and wondered what it all means, are inclined to the view that the inhabitants of at least one or two other planets in our own or neighbouring solar systems are, in relation to our rate of scientific development, decades if not centuries beyond the stage of communicating only by radio. They have apparently achieved space travel and their ships have been seen here intermittently throughout history.

Accepting this, one realises that they must be either indifferent to us or passive friends. Our civilisation has grown up in ignorance of their existence—until now. The thousands of sightings, in the air and on the ground, since Kenneth Arnold's famous encounter in 1947 over Mount Rainier in the State of Washington, show that any indifference appears to be diminishing: indeed, we could be of growing interest to our neighbours —whose bases or dwellings we plan to visit, believe them empty and moss-grown though we may.

Readers of FLYING SAUCER REVIEW will be acquainted with the argument that friendliness is consistent with non-interference in the development of civilisation on earth. Were a more advanced people to appear as a *deus ex machina* it would bring our history to a close and submerge our culture in its own. This would be a form of aggression and those people would lay up for themselves greater trouble than our world now experiences through the demands of hitherto underprivileged and subject peoples. Friendliness would be shown not by trying to communicate, but by avoiding communication until the time is ripe.

What Marconi believed

Marconi is said to have believed at one stage in his experiments that he was receiving signals from Mars. Suppose he had done so and they were interpreted; by now, regular communication would be established and much information

exchanged. If the Martians were at a higher level of civilisation, would not world governments be referring problems to them? If they were at our level, would not the scientific motive of space exploration be overshadowed by considerations of defence and by a rivalry in getting to Mars before the Martians might get at us?

Suppose radio messages were now to be received, apparently from outer space. Can you not imagine sceptics arguing that these are nothing but propaganda from Sputniks? And, on the other side, that it is a capitalist trick to disrupt the Soviet Union?

A friend of mine, who has more information about unidentified flying objects than I have, recently wrote: "There are many strange and important things which are not revealed to the general public due to fear of jeopardising political and international relationships through wrong impressions." He adds that even if there is a good case for the U.F.O., it is another matter to prove where they come from. If someone were told, would he be believed? If one or more persons were taken there to see, would it not be said that they had been hypnotised or gone on an astral journey or been otherwise deluded and that such evidence as they might bring back was faked?

Timely self-disclosure

A time will come when we shall see for ourselves; or, rather, be prepared to accept reports from the mechanical inventions sent forth by our scientists. If there are signs of intelligent activity on the Moon, Mars or Venus, that time cannot be far off. Then, these questions will arise: Who is there? Are they human? Are they more, or less, advanced than we are? Are they friendly? This could be the psychological moment for self-disclosure by the crews of spacecraft, here, before we go armed to find the answers to our questions.

Some, who claim already to have met people from flying saucers, say that landings cannot be made openly at present because the visitors would provoke fear and consequent hostility. The danger of this will lessen when their existence is publicly accepted, but no-one should imagine that it will cease. To fear of the unknown will be added fear of the different: fear that the visitors constitute a moral and physical threat to our way of life; fear that they might kidnap us in the interests of their science; that they might bring unknown diseases; that their customs might challenge our accepted standards in family life, in sex, in economics or in religion; that they might have latitudes we should call license, abstinences we should find insupportable!

In the March/April issue of the FLYING SAUCER REVIEW it was claimed that landings can only take place safely when 80 per cent. or more of the population, in the area visited, are friendly.

Best known among those who say they have met people from other planets is George Adamski, who claims several meetings since his original well-authenticated encounter in November, 1952. In 1957 he informed his correspondents that his friends from other planets had suggested he start a "get-acquainted" programme among those who accept the reality of visitors from space. At that time, people were often subjected to ridicule if they displayed interest in flying saucers and they were grateful to have someone to talk to. Adamski, helped by volunteers in different countries, put his correspondents in touch with one another, with the result that many groups were formed and these have had a share in influencing public opinion.

New phase of development

In early 1958 Adamski wrote to these groups: "Our efforts spaceward are excellent, and so long as they continue scientific and peaceful, they are being encouraged by our space neighbours. Like children growing up, this new phase of Earth's development opens vistas for new experiences of which we have never before dreamed. The system lies open around us, beckoning us to visit and become acquainted. The peoples of other worlds are waiting to welcome us in peace and friendship. If we can grow as one world family, settling our differences and learning to work together in harmony, we will be surprised at the joys and opportunities awaiting us. But this can only come through co-operation—not divisions.

"That is why we who are working in this programme find ourselves in positions of such importance. Through our initial efforts of getting the peoples acquainted with one another, and encouraging fellowship between all without divisions of colour, rank, race, religion, politics, etc., we are doing the essential spade-work to bring understanding and tolerance to our planet."

In 1959 Adamski went round the world on a

lecture tour, by invitation, asking for nothing but his expenses to be paid. Arrangements were made by amateurs, but there was a surprising degree of co-operation between individuals of different nations and, so far as Britain was concerned, he received a welcome ranging from BBC interviews on " In Town Tonight " (radio) and " Panorama " (television) to would-be audiences greatly in excess of what had been thought possible.

Many willing to believe

There is now, in this country certainly, a strong element of public opinion prepared to accept the existence of friendly visitors from space. Many people would be glad to do something to help to make contact with them, if occasion should arise, but they do not know what to do. Nevertheless, it is unlikely that there will be 80 per cent. of the population believing in and friendly towards such visitors by the time we may expect to get pictures of the Moon, Mars or Venus that might show signs of intelligent life.

The January/February, 1960, number of FLYING SAUCER REVIEW reported a question from South Africa concerning the meaning of the word " service " in the name Flying Saucer Service Limited. In this respect, I have a suggestion to make. I believe that there really are other people in the universe who will eventually be prepared to visit earth openly: I think something should be done about that 80 per cent., and that Flying Saucer Service Limited can help, through the Review.

Long before it could be said that so high a percentage of the inhabitants of any place were prepared to accord a welcome to visitors from space, it should be possible to arrange a welcome by assembling people by private car and public transport. I suggest that groups of people, willing to assemble at their own risk if the call should come, form themselves and notify FLYING SAUCER REVIEW the name and address of one of their number who would undertake to inform the others. In preparing a register of contact men, FLYING SAUCER REVIEW should put any two or more groups in one town or city in touch with one another, retaining only one contact—to avoid being overburdened. There should be no other correspondence with these groups unless and until FLYING SAUCER REVIEW receives information that a landing will be attempted, when the contact men within a few hours' reach of the area would be informed of the time and place. To defeat hoaxers, such information should be given by letter from FLYING SAUCER REVIEW through the mail and the contact men would be asked to telephone for confirmation before taking action to inform their groups.

Space contacts already here

How could FLYING SAUCER REVIEW avoid being hoaxed? As stated, I believe that space visitors exist. I am also prepared to believe, with Adamski, that they have men on earth unnoticed by us—their own students or contact men. If so, they will become aware of this organisation and be able to take advantage of it. I am prepared to trust the judgment of the directors of Flying Saucer Service Limited, who are businessmen and not proponents of any philosophy or religion, and leave it to our space friends to convince them that they really propose to land somewhere—if they do.

The only requirement of the groups is an awareness of the purpose for which they would be gathering together; namely, to protect the visitors. This does not mean interference with performance of their duties by police, customs or immigration officers, should they be on hand. Such awareness should include being prepared to control their own feelings of alarm at the sight of a strange craft and to stand still at a distance from it until invited to move by some person emerged therefrom, perhaps by gesture or, possibly, in the language of the country.

This is a practical step, given the reality of space visitors. It is a step for which the time may come in months or in years. It is a step which Flying Saucer Service Limited could service. I suggest existing groups discuss it and, if it seems a reasonable step, inform Flying Saucer Service Limited of their desire to register a contact man and have this service performed, should occasion ever arise.

GET OFF THE DEFENSIVE

says TREVOR JAMES

ONCE upon a time, in the bad old days of a decade ago, when mechanism was the ruling force in philosophy, metaphysical speculation was the unforgivable sin of science. Officially, perhaps it still is in the more cloistered domains of science. In the hard, practical world of American space programmes, however, things have taken a different turn, a turn that has major significance for ufology.

In what is presumptuously termed "astronautical science," metaphysical speculation is not only the basis of everything planned or envisaged, it is also the basis of a colossal financial investment. There are, as yet, no astronauts and precious little that is scientific in terms of repeatability. But metaphysical speculation is there in plenty, not in the sense of such speculation drawing upon any of the known systems of esoteric science, but in the sense of guesswork.

Astronautical "science" would collapse without guesswork, which it dresses up in quasi-scientific jargon. The ufologist, at his worst, never perpetrated upon the public the frauds that governments now finance as "astronautical sciences."

In American missile companies, regular idea conferences are held. In these gatherings, Ph.D.s and lesser lights pump from their imaginations for the consideration of their fellows, ideas and concepts that would have seen them kicked out of the scientific profession as mystics fifteen years ago.

"Blue Sky" ideas

The U.S. Government calls for "blue sky" ideas, any ideas, no matter how fantastic, that might lead within twenty years to an anti-missile weapon. The progenitors of these blue sky ideas are then told to *try and prove that the ideas would not be feasible* because they violate natural law or some other permanent factor. Anything not rejected on these grounds would be considered for future investigation. This project, known as GLIPAR, Phase 1, is being financed with one and a half million dollars, and places contracts with firms like Convair, General Electric and Republic Aviation. They will study death rays, anti-gravity machines and magnetic walls.

"Black Magic" considered

The U.S. Navy is purportedly so desperate over the lag in anti-submarine devices that it has recently stated that any idea, "even black magic," will be considered if it will add to anti-submarine techniques.

On the news stands of the U.S. a plethora of technical magazines dealing with the "space sciences" has appeared. Luridly illustrated with photographs of blasting rockets, exploding missiles and blockhouse candids of the over-coffeed pioneers, these magazines contain articles by top scientists. The articles are a lattice work of specious, speculative hypotheses, tacked together with "ifs," "shoulds" and "mights." They deal hardly at all with the known. This has no power to stir the taxpayer's soul, nor to stimulate further the already prolific speculation on which all this work rests.

The time has come when the ufologist should take note of these processes, which are utterly destructive of the old order in science. The ufologist must realise that it is time for him to get off the defensive, and understand that there is nothing reprehensible whatever in expressing radical ideas about the UFOs and what they

"... the climate of the truly open mind is upon us"

might be. Nobody on this earth knows by the processes of discursive reason alone whether a human being in his physical-mineral body can cross space. The matter is entirely speculative. Yet billions are now being allotted to this project. Why should any person interested in the observed, but as yet unexplained, UFO feel bashful about "having a go" with a few original ideas? At worst, he will be on ground every bit as firm as that which now quakes under the "sciences" backing the astronauts.

Even the ufologists, who have adhered strictly to the established scientific methods, have had to put up with vilification and mockery in the past from the same people who now wallow in the riches of space appropriations. Far worse has been the lot of those who in one way or another, followed the "etheric interpretation" of the UFO, as first promulgated and propounded by Dr. Meade Layne, of San Diego, California.

These people, including the writer, sought to tackle the UFO mystery by applying to it the yardstick and knowledge supplied to man by the esoteric sciences. In other words, the metaphysical speculation employed by these people had its basis in a metaphysical system dating back into antiquity. Even with its aid, many aspects of the UFO mystery could not quite be comprehended, let alone explained or conveyed to those without a background of esoteric studies.

The etheric interpretation

Some of the persons plumping for the etheric interpretation made a mistake or two, or said or wrote something subsequently shown to be erroneous. This in no way invalidated the overall theory, any more than one missile, shattered and flaming on its pad, invalidates the orbital theory. Yet Dr. Layne, in particular, was frequently attacked for his views, advanced as they were in an era when metaphysical speculation was not the bedrock of a government programme involving billions of dollars.

There is one phase of the space programme, regarded as of cardinal importance, which demonstrates to all ufologists that any space "science" must rely upon metaphysics for coherent direction. This problem is that of a man in space, or in orbit.

The Russians have already demonstrated that they can hurl a 175-lb. dummy into orbit. The mineral substances of which man's physical-mineral body is formed, can likewise be made to circle the earth. The real problem is the *intelligence that expresses itself through that body*. How to get that back to earth is the milk in our expensive space coconut.

A comfortable conviction

For a century or more, science has coasted along with the comfortable conviction that study of the physical-mineral body of man is all sufficent. Any attempt to explore vital energy, or the intelligence expressing itself through the body, meant that the person making such ventures had to part company with his fellows, philosophically and often professionally. Now things are different. The government pays huge salaries to scientists to get the physical body back out of orbit with the assigned personality still using it.

In the face of all this, the ufologist should take heart. He need have no fear of ventilating his views on the mysterious flying objects. He can feel relieved that hardly anything he may write or say that is rationally expressed could be as imaginative and speculative as the ideas of "astronautical scientists" in their conclaves.

In this incredible age, the climate of the truly open mind is upon us. Every ufologist should rejoice in its advent, and throw off the conceptual, social and scientific shackles that bound him tight in the bad old days of a decade ago.