

FIREBALLS AND FLYING SAUCERS

by C. Maxwell Cade

THE great Michael Faraday, to whom we are all indebted for our heat, light, television, and other electrical wonders, once said: "There may be balls of fire but they are not electrical . . ." D. J. Ritchie, one of the most eminent modern authorities on ball lightning wrote, in an article in the *Journal* of the Institution of Electrical Engineers (May, 1963): ". . . the origins as well as the existence of ball lightning have, in the past, been extremely controversial, with some authorities insisting that such a phenomenon did not exist." Ball lightning, in fact, has been one of the most-disputed phenomena in the history of science—until it was realised that it made a handy explanation for the even more embarrassing phenomena known as Unidentified Flying Objects.

The well-known science writer, Phillip J. Klass, wrote a perfectly factual account in *Aviation Week* (Vol. 85, No. 8) of sightings which could have been due to ball lightning, and this was seized upon by other writers to create a Nothing-But-Fireballs philosophy which has received an unmerited airing in the national press.

Whilst no wholly satisfactory theory of ball lightning has yet been formulated, the facts are plain enough: lightning balls are electrical phenomena, usually appearing towards the end of severe thunderstorms, spherical or pear-shaped, brilliantly luminous in various colours, varying in size from that of a pea to that of a football, and occasionally to enormous globes of five or six feet in diameter. The balls float slowly through the air, often against the direction of the wind, and they may vanish silently or explode with devastating force, sometimes causing numerous deaths and great damage to property. They often appear from the most unlikely places; out of shut rooms, ovens, fireplaces, stagnant pools, drainpipes or sewers, as well as among the clouds where they are sometimes encountered by aeroplanes. Sometimes they grow slowly in size, at others they diminish or break up into smaller balls. The following case histories are of sightings which very probably were due to ball lightning.

Case 1. Early in the morning of August 6, 1963, Mr. R. Austin of Fairfield, Illinois, arrived home in an agitated condition after being "chased" by a round ball of bright white light with a fuzzy outline, and which appeared to be about the size

of a washtub. Mr. Austin's car was stated to be capable of 120 m.p.h., but he was unable to outdistance the UFO, which at one time assumed an orange tint (the commonest colour for fireballs, C.M.C.). Within a few days of this occurrence numerous other UFOs were reported in the Wayne County area. According to Mr. Austin, the light kept pace with the car, slowing down when he slowed down, accelerating when he accelerated. Eventually the object assumed an orange tint and faded higher into the sky.

Case 2. *Hereford Citizen and Bulletin*, December 6, 1963: "Wormelow lorry driver Mr. Tom Walker is convinced that he has seen a flying saucer . . . Driving home to Grove Cottage, Wormelow, Tom saw something in the sky . . . he told our reporter: 'It was low down beside me and not far away and it began to follow me all the way up the Callow and home to Wormelow. What made it stranger was the fact that when I reached home it soared up into the sky and disappeared.'"

Although they took place half a world apart, the two preceding cases both occurred in the northern hemisphere. Let us now look at a similar happening from far off Australia:

Case 3. *New Zealand Herald*, May 22, 1963: ". . . the youth said he saw the object about 9.30 p.m. when driving between Glencoe and Mt. Gambier, near the Victorian border. He said the object was on one side of the road. He thought it was a truck or a bulldozer. Then, when his car was about 20 yards away, a bright light came on and dazzled him. 'I pulled up, the object moved across the road, and I speeded up my car. The light suddenly shot straight up into the air and hovered above the car while I drove underneath. Although I was driving at 50 or 60 miles an hour, the light followed the car. It was as bright as an arc light used in electric welding.'"

The similarities between these cases are really very remarkable. They are so widely separated in time and space as to render the conventional explanation of "hallucinations" just as improbable as the unconventional explanation of "extraterrestrial vehicles". It may be objected that ball lightning does not follow motor cars like a prowling traffic policeman. But why shouldn't it? It is known that ferro-magnetic

materials, such as gun barrels, are often very highly magnetised by contact with, or the close proximity of, lightning balls. In a similar way, it has been known for a long time that the ordinary lightning flash often magnetises the metal parts of ships so powerfully as to render the compass useless. Is it not possible that a motor car which approaches or is approached by a lightning ball in relatively open country with an absence of other vehicles, should exercise a magnetic influence over the ball? In which case, we have been looking at the phenomenon back-to-front. It is not the lightning ball which is pursuing the motor car, but the motor car which is dragging the lightning ball along with it.

Case 4. In the *Worcester Evening News* of July 27, 1963, we read how a brilliant white ball of fire which turned orange was reported as having been seen over Malvern twice in one night. Mr. Lloyd and his wife, of St. Andrew's Road, Malvern, had retired for the night when a brilliant white light illuminated their bedroom through the drawn curtains. The source of the light was a large ball-shaped object in the Old Hills direction. It moved towards Malvern, disappearing in a south-easterly direction. While it moved it emitted a brilliant pulsating white light, which turned orange just before the object vanished. Mr. Lloyd stated that he saw the object again, forty-five minutes later. Both times, the object did not disappear instantly but gradually diminished "as though the object were climbing at speed at an angle of about 45 degrees." The same effect would, of course, occur if the light simply diminished while remaining stationary. After the disappearance, according to Mr. Lloyd, there was a noise for a few seconds "as of powerful jets"—similar noises have been reported in connection with many unquestionable lightning balls.

These cases show, I think, that a proportion of UFOs can be explained as ball lightning at least as well as they can be explained away as anything else. But before passing on to totally different phenomena, I shall mention a class of fireballs which is undoubtedly responsible for many UFO sightings, but which is definitely not ball lightning.

There is a class of unusual meteors caused by fragments of comets (cometoids), in other words, by lumps of frozen water and gases. The Slow Moving Green Fireballs, as they have come to be known, show some indication of annual or semi-annual periodicity in occurrence, but have a large sporadic occurrence as well. Sometimes the green ball has a red halo, or a faint red wake. They have been observed not only to wobble, but to change their flight path, and their trajectories when below a few thousand feet are nearly horizontal.

The most careful examination of areas where flights seem to have ended has never discovered debris of any kind, but falling droplets have been seen after the passage of some of these fireballs. Laboratory experiments have shown that frozen metastable nitrogen undergoes a transition at 16 degrees Absolute which produces a strong blue-green radiation, and this is thought to be responsible for the characteristic luminescence of the Slow Moving Green Fireballs.

Case 5. On July 19, 1956, a number of strange objects passed through the skies of Kansas and were witnessed by several observers. That same day, the *San Diego Evening Tribune* reported: "The Kansas State Highway Patrol today said 'a ball of fire travelling east at a high rate of speed had been picked up by radar at the Hutchinson (Kan.) Naval Air Station.' City Editor Brian Coyne, of the *Arkansas City Daily Traveler* said 'a brilliantly-lighted, tear-shaped object with prongs or streams of light spraying downward was sighted shortly after midnight. A second object was sighted around 1 a.m.' He also described the head of the object as being green in colour or bluish-green." This is typical of a cometoid sighting, and in general such objects are both more common and more spaceship-like than lightning balls.

Let us now turn to a sort of transition-sighting, one which bears certain resemblances to fireballs, whilst having a distinct suggestion of the spaceship about it.

Case 6. On November 17, 1882, Bishop Michaud made the following observation: "I was standing on the corner of Church and College Streets . . . when, without the slightest indication or warning, we were startled by what sounded like a most unusual and terrific explosion, evidently very nearby. Raising my eyes, and looking eastward along College Street, I observed a torpedo-shaped body, some 300 feet away, stationary in appearance, and suspended in the air, about 50 feet above the tops of the building. In size it was about 6 feet by 8 inches in diameter, the shell or covering, having a dark appearance, with here and there tongues of fire issuing from spots on the surface resembling red-hot unburnished copper. Although stationary when first noticed, this object soon began to move rather slowly and disappeared over Dolan Brothers' store, southward. As it moved, the covering seemed rupturing in places, and through these the intensely red flames issued." Charles Fort (probably with his tongue in his cheek) concluded, from the many different accounts of this well-attested event, that: ". . . upon November 17, 1882, a vast dirigible crossed England . . ."

And now we can complete the transition by considering a case which by no stretch of the imagination can be explained away as a slow moving green fireball, and is even less like ball-lightning.

Case 7. On the morning of December 20, 1895, a strange appearance in the sky was observed from Virginia, North Carolina and South Carolina. A brilliantly white luminous body passed overhead from west to east, until at about 15 degrees above the eastern horizon it seemed to stand still in the skies for about fifteen minutes or more. Some descriptions referred to "an enormous wheel"; according to others, whatever it was, appeared to be the size of a table. The noise of its passage through the air was reported to be heard, and eventually it just disappeared without any audible or visible explosion.

This last case is as unlike the familiar flying saucer reports as it is unlike ball lightning or green fireballs, and it may be some entirely new phenomenon. This is the important thing to note. It is quite certain that many UFOs are lenticular

clouds, others are motor car headlights, Will-o-the-Wisp, Venus, Jupiter, slow moving green fireballs, or ball lightning. This does NOT, however, mean that all sightings can be reduced to this, or any other circumscribed list of standard ' explanations . It is even more fatuous to attempt to reduce the extraordinary variety of appearances, conveniently lumped together under the heading of UFOs, to any one of these categories.

Almost all scientists now admit the overwhelming probability that life of some kind is widely distributed throughout the entire Universe, and although it is only about ten years since space flight was described as "utter bilge", it is also widely admitted that manned spacecraft will explore the solar system, and unmanned probes reach for the nearer stars, within the next twenty years. In these circumstances, it is far more "unscientific" to try to dismiss all unexplained aerial appearances as familiar phenomena than it is to hold the open minded view that some of them may be the artefacts of extraterrestrial communities.

CONGRATULATIONS

Our readers will be pleased to learn that our valued friend and contributor, Jacques Vallée, has successfully concluded his latest university course, and has been awarded his Ph.D. in Computing Science.

Dr. Vallée has now taken a post at an important computing centre in Chicago.

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