

THE MONZE METEORITE

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General Information.

In the early morning of October 5th, 1950 at approximately 4.10 a.m. a large meteorite of great brightness was observed high up over the Rhodesias. Reports of the flight have come from observers scattered as far afield as Salisbury, Bulawayo, Lusaka, Mazabuka, Monze and Kalomo. It is gathered that most people who witnessed the occurrence saw only a large ball of fire flash across the sky. In Northern Rhodesia, particularly in the Mazabuka-Monze district, the meteorite was low and bright enough to wake people from their sleep - this prior to its explosion.

The meteorite was observed to travel over Mazabuka apparently in a S.S.W. direction towards the Kafue Flats where it exploded. The detonation was heard from Kafue to Kalomo along the line of rail, and a report has been received that it was also heard in the Zambesi Valley about 25 miles south-east of Gwembe Boma. These reports indicate that the detonation was heard over an area of approximately 20,000 square miles.

It has been difficult to determine the actual line of flight owing to conflicting reports. The meteorite has been reported as passing overhead at Mazabuka. At Chief Chongo's the line of flight was indicated along a bearing of 312° magnetic. This latter bearing is also that indicated by the villagers of Chiteba, who experienced a hail of fragments. In view of the two latter reports being near to the source of explosion and which are in agreement it is assumed that the line of flight was approximately 312° magnetic over Nteme, the seat of Chief Chongo.

A meteorite, when still fairly high up, would be reported by two observers 30 miles apart as being overhead in both cases.

The most reliable report of the time of flight comes from Mazabuka where Sister Cocker was waiting to be picked up by Dr. Iljon, both on their way to the Native Hospital to operate. Dr. Iljon was in his car at the time the meteorite passed overhead and it is to his presence of mind that we are indebted for the correct timing of the occurrence. It was reported by him that it passed over Mazabuka at 4.12 local time, his watch having been checked the previous evening. Dr. Iljon stated that he did not see the meteorite itself as he was driving at the time but that the light emitted by the meteorite lit up the country as if it had been midday. Sister Cocker, who was standing by the roadside at the time, reports similarly that it came swiftly overhead and lit up the entire countryside for miles around. She also stated that it seemed about the size of the sun as it passed overhead. She then got into the doctor's car and about two minutes afterwards when on their way to hospital they both heard what seemed like two explosions, likened to thunder or distant gunfire. Dr. Iljon observed the time again and noted that it was 4.15 local time.

About a week elapsed before anything further was heard about the meteorite. Speculation went on in the Mazabuka-Monze areas as to whether the meteorite had actually fallen or had exploded in the air: it was suggested also that it had merely come near the earth's surface and had travelled on into space after, perhaps, discarding a large fragment or series of fragments of itself. Talk in the hotels, where the farming community would normally discuss crops, the coming of the rains, local

gossip and the World Situation, changed for a brief period to discussion on the meteorite and what it was.

One day Chief Chongo left his country and paid a visit to the District Commissioner. He thought that what he had in his pocket was of sufficient importance and interest to warrant a special visit. He then produced three small pieces of brown-black stone which he gave to Mr. Vaux, the District Commissioner, Mazabuka, and asked if they really were pieces of the "star which fell down last week". Mr. Vaux thought that they were and he told Chief Chongo that he would look into the matter. Chongo then told Mr. Vaux that the star had travelled far across the sky, had woken many of his people and had caused them great fear. On two villages in the area of Mwanachiwindu - those of Chiteba and Chizuni - there had been a great rain of stones from the sky just after the star had fallen and exploded with a great noise, the like of which had never been heard before.

Chief Chongo then asked Mr. Vaux if he would "please send a piece of star to My King, George, and tell him what has happened in my country and what has visited us, for I know that he will be interested".

(This sentence of Chongo's in quotes was also spoken word for word by Chongo during an interview with me).

Mr. Vaux then brought the pieces of meteorite to me for verification and we agreed that it was a pity to leave the occurrence at three small pieces of stone and entirely undocumented. It was then arranged, with the sanction of my Department, that I should contact Chief Chongo and Chiteba village and gain what was available, working this visit in with a programme of work on Lochinvar Estates.

Accordingly, Chief Chongo and Chiteba village were visited. A search was made for further fragments and about 15 lb of meteorite was recovered, with the promise that the villagers would look for more. At first many of them were frightened at handling the material, but their fear was soon allayed when they were told, simply, of the occurrence.

The Director of Civil Aviation kindly offered a plane for search for the "head" of the meteorite. A survey of 120 square miles was made on a pre-determined bearing but no success was obtained in locating any craters which might have been formed by sizeable fragments of the meteorite.

It was decided to name the meteorite the "Monze Meteorite" as Monze is the nearest place name town to the disintegration which took place.

Distribution of reasonable samples of the specimens so far obtained is being made to various scientific institutions in order of importance, the British Museum being first on the list and the Colony's own Museum, the Rhodes-Livingstone Museum being second. Universities where research on meteorites is in progress will also receive samples.

The Location of the Meteorite.

As far as can be determined at present, the meteorite exploded about 30 miles N.N.W. of Monze, Northern Rhodesia. Monze township is 16° 16' S. x 27° 28' E.

The meteorite fell somewhere within the square of the following point co-ordinates:-

- (1) 15° 45' S. x 27° 15' E.
- (2) 15° 45' S. x 27° 30' E.
- (3) 16° 0' S. x 27° 15' E.
- (4) 16° 0' S. x 27° 30' E.

The disintegration probably took place just within the east-southeastern boundary of Lochinvar Estates, Ltd.

The villages of Chiteba and Chizuni lie in Chief Chongo's country a few miles from the eastern boundary of Lochinvar. These two villages, together with others in this area, experienced a severe hail of fragments at the time the meteorite exploded. Fragments have been recovered within a radius of 2 miles from Chiteba. Chizuni is about 2 miles N.N.W. of Chiteba and all the larger fragments came from near Chizuni.

It would appear from field observations that the meteorite exploded some miles N.N.W. or N.W. of Chizuni village. This conjecture is borne out by the distribution of the fragments according to size - and it is also the direction indicated independently by numerous villagers as being the source of the sound of explosion and the general direction from which the fragments seemed to come.

This direction is approximately on a bearing of 312° (magnetic) from the well at Chiteba: there is only the one well at Chiteba.

Since the investigation took place, it has been reported by an African employee, Aaron, of Lochinvar Estates, that a very large piece of stone which he definitely connects with the occurrence of the meteorite has broken a lying log into two pieces and buried itself about four feet in the ground. Aaron reported that he tried to get it out at the time but it was too firmly embedded. The location of the specimen appears to be in the area of Lochinvar Estates adjacent to Chiteba and Chizuni villages. This information came from Mr. Ras, Field Manager of Lochinvar, and as Aaron was 30 miles away at the time, it was impossible to investigate his story. When Aaron returns an investigation will be made. This area is the likely area for larger specimens, as indicated above.

The Specimens.

The majority of samples range between 1½" and 2½" in diameter and are sub-angular in shape. The outside surfaces of all of the fragments are discoloured to a brownish-black by fusion and oxidation of the rock due to friction as the fragments hurtled through the air after disintegration of the major body. About a fifth of the fragments appears to have split during either low velocity or when they hit the ground, giving fresh, unfused surfaces.

A typical specimen is heavy, and consists of a fine-grained greenish-grey stone which, even with the unaided eye, may be seen to be speckled with a tin-white native metal, alloy or sulphide.

Nearly all of the fragments show "winnowing" on the fused surfaces - evidence of their being eaten away during their passage through the atmosphere.

Mr. Brandt, Geologist to Anglo-American Co., Ltd. has made some excellent micro-slides in the field of a fragment given him. From the slides made (all from the one piece) it

has been determined that the rock is almost pure olivine with, perhaps, the trace of a pyroxene. The only other constituent is the native metal, alloy or metallic sulphide which is distributed evenly throughout. We are both in agreement that the metal appears too tin-white to be pure nickel iron and suggest that it may contain metals of the Platinum-Palladium Group; but this must be for final analysis. Two or three small flecks of native copper were seen in the samples.

The rock, being almost pure olivine, may therefore be classified as a dunite. It is interesting to note that the occurrence of the Platinum Group of metals is closely linked with this rock type on earth.

It appears, then, that once again there is nothing new in this meteorite which is not known on earth - both in elements, minerals and rock type, but serves to indicate even more how much we and our earth are an integral part of the solar system and of the Greater Universe.

Eye-Witness Accounts of the Meteorite.

The following are eye-witness accounts of the occurrence. They are all from the area in which the meteorite disintegrated. Nteme, the seat of Chief Chongo, is about 9 miles N.W. of Monze. The villages of Chiteba and Chizuni which experienced the hail of fragments are 18 miles from Chongo by track and it is estimated that they would be about 14 miles from him in a direct line. They lie on the south-eastern boundary of Lochinvar Ranch and are just a few miles from the Kafue Flats proper.

The two most complete reports are those of Chief Chongo himself, at Nteme at the time, and that of an African called Mamadudu of Kemba who was near Chiteba. These two will be given first.

(1) Chief Chongo reports:-

"At about 4.20 a.m. on the 5th October, 1950 I was awake inside my house and suddenly I noticed a bright light outside. I ran outside to see what it was. When I got outside I saw that many others of my village were also running out to see what caused this great light. The light was as bright as midday. I looked up into the sky and saw a large star coming over us from the east. It consisted of a head and tail. The head was a deep red in colour and very large - by comparison for size, if the moon appeared as big as my eyeball, the meteorite would be about the size of a motor-car when seen very close by. It had a long thin tail which was white in colour and about five times as long as the diameter of the head.

It was approaching very fast and took only a few seconds to pass right overhead. When first seen by me it was about 50° above the horizon. As it crossed the moon I noticed that it was sending out many streamers of fire which crossed and zig-zagged in all directions.

Then the tail broke into three long pieces which were about the same size, and which remained in the same line as the line of flight. When the star had passed overhead and was about 25° above the horizon its light suddenly went out. It did not appear to land further on amongst the trees.

A short time after there was a violent explosion and the ground and my house shook. Following immediately upon the explosion came a strong reverberation such as violent thunder which came from the direction in which the star had gone and which passed over and behind me and died away in the distance.

When the reverberation had died away there came a strong, constant and very cold wind which followed over in the direction from which the meteorite had come. Nothing happened after the wind had died away and all was silence again".

Mamadudu of Kemba.

Mamadudu of Kemba stated that he was out with his son cutting poles near Chiteba and that he saw the meteorite pass from East to West. They were both very frightened and could only stand and watch the entire phenomenon. According to Mamadudu, the meteorite had a very large head and a long thin tail. Both head and tail were white in colour as the meteorite flashed across the sky.

It appeared to approach the moon and seemed very much bigger than the moon. The light it emitted became so bright that it was impossible to look directly at it, and the moon became paled into insignificance. When near the moon it gave the appearance of causing the moon to shake - Mamadudu is uncertain of this, as he says that it may have been due to his eyeballs shaking with fear or the bright light.

The head then passed across the face of the moon, obliterating it. A second or so later the colour of the head changed from white to red. At about the same moment the tail broke into three pieces all of about the same length and which remained in line. The three separate pieces of the tail were of different colours. As far as can be determined they were (1) that nearest to the head was red, (2) the centre piece was greenish and (3) the last piece was described as being brilliant and something like the appearance of a rainbow.

A second or so after the tail had split the light of the head went out - apparently it was there one moment and gone the next. This happened in mid air and somewhere about 45° to 50° above the horizon.

Immediately after the light of the head went out came an enormous single explosion followed by a great reverberation which seemed to carry back over the path of the meteorite.

Then came the "wing-wing" of stones flying through the air, seemingly travelling in all directions and accompanied by a strange buffeting wind.

After this came silence again.

Other Accounts from Nteme.

Thomas Siganza stated: "My house is about $\frac{1}{2}$ mile from that of my chief. We were all sleeping outside our huts that night. Some of us were awake at the time and we saw a large star coming towards us from the east and going towards the moon. The star was a brilliant white and it had a long thin tail which was also white. The head seemed many times larger than the moon and its brightness became so **great** that we could not see the moon.

We looked at the star with great fear for we did not know what it meant. It seemed to hit the moon and then went out with a terrific explosion. The voice seemed to go back from where the star had come".

Harrison Hajarika also lived about half a mile from Chief Chongo. He stated: "I was fast asleep outside my house when the meteorite passed over. I was then woken by a noise and my wife came and called me to see the star. When I looked

up I saw only a trail like smoke across the sky. I was then aware of a great rumbling which seemed to pass overhead and died out in the distance".

Comment.

It seems that Harrison was just a few seconds too late to witness the actual occurrence. The meteorite had vanished when he looked up. It is, however, of great interest that he notes he saw a trail like that of smoke across the sky. He is the only one to remark upon it. Either the others had ceased to look up when the meteorite had vanished or their eyes were somewhat blinded by the previous display and they failed to notice the trail by reason of the contrast.

S. Zambatis, a Greek Trader whose house and store is about 500 yds. from Chief Chongo's house related the following: "In the early morning of October 5th at about four o' clock my wife and myself were woken up by a terrific noise. We both jumped out of bed and went out to the verandah. The noise at first seemed to come from one side of the house and then it passed overhead. It was so great that I lack words to describe it - it would best be described as an enormous rushing roar and rumbling. It seemed to carry on for some moments and disappeared slowly.

We saw no light and heard no explosion. The noise which I have described was all we experienced of the occurrence".

Comment.

It would seem that Mr. Zambatis and his wife were awoken by the original explosion and that they hurried out of bed only to hear the reverberation which followed. This would account for their not having seen any light. Zambatis' Store is 500 yards from Chongo's house and Chongo and all others mention the great light which lit up the countryside for miles around.

The Area of Chiteba and Chizuni Villages.

Mwanachiwinda, headman of Chiteba village stated: "Early in the morning of 5th October I was inside my house and I saw a very bright light outside. whilst I was wondering what it was and getting up to see there was an enormous and terrifying explosion. The ground and my hut shook violently for a few seconds. When I had recovered from my fright I went outside to see what it was all about. When I had taken about two steps outside my door there suddenly came a very very strong buffeting wind from all directions and I heard the "wing-wing" of falling stones. Again I was afraid and I ran back into my hut. It seemed as if the wind continued for two or three minutes and I could still hear the sound of stones falling. When it was all over I went outside and when the sun came up I picked up three pieces of the stones which fell and the same day I took them to my Chief to show him and tell him what had happened at our village".

Other accounts from Chiteba and Chizuni are essentially similar. All the people in this area were inside their huts sleeping and the phenomenon was almost over before they knew anything. All were awoken by the original explosion and heard the reverberation and experienced the sound of flying fragments together with the strange buffeting wind.

The fragments were sparsely distributed - about every 200 yards or more. There were no casualties to man or beast in any of the areas.

Monze, N. R.
29th November, 1950