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Science in the Light of Sura-e-Feel Chapter 105 of Quran

By

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A FEW FACTS

Every night after dinner my father used to gather our family in our house backyard (veranda) and read Quran and its translation. At that time I was in high school. Still today I can feel the chill of winter time while listening to him with my eyes half open and awaking with laughter when Moses stories were read about manna and salwa (food) descending from heaven. Those sessions have left memories in my sub-conscious and flashes when I read Quran or anything that I can relate to those sessions.

Similar flashes happened when I was doing my under graduate studies in Chemical Engineering at the University of Illinois (U of I) at Chicago, Illinois. In my thermodynamic class when the professor was going through the Laws of Motion, the incident in Sura Feel started to flash through my mind. During my tenure at the University I developed an equation of force that could have destroyed the Abraha's army. Since then, I had moved with my family from the Windy City. Chicago, Illinois to the Golden State, California in Orange County. In early nineties when California was in recession due to the drop of the Iron Curtain, I too fell prey to the recession and had to retrain myself as an Environmental Engineer. While I was doing my masters at Cal State Long Beach, I remembered my research about Sura Feel. I was lucky enough to find the research paper in my saved notes and printed it in HUDA Newsletter Volume 14 No 1 dated October/November 1998, Rajjab/Shabaan 1419 H. Today, after 11 years, July 6, 2009, on the request of many community members in California and all around United States I am typing this research paper again. It is by coincidence that today Islamic date is Rajjab 13, 1430 H and the Birthday of our 1st Imam, Hadarat Ali (A.S.). Eleven years ago was also Rajjab when I published this research paper. By the grace of Allah and blessing of Fourteen Infallibles and thanks to internet revolution I have enhanced the equation from its previous publication. Anyone is permitted to reproduce this research for the propagation of Islam, but with due acknowledgement to **HUDA** Newsletter and myself, **Taher A. Mooman (Momin)**.

DEFINATIONS

Rare Material

Molecules are loosely packed this makes mass larger. For example Wool is a rarer material where as Iron is a denser material. If one pound (lbs) of iron and wool is considered, wool mass will be greater.

Tarmeehim

The word used in Ayat 3 of Sura-e-Feel Chapter 105 actually means throwing in which force is involved

Sijjeel

The word in Ayat 3 of Sura-e-Feel Chapter 105. The origin of this word is from Persian means baked Clay, a rarer material. When a rarer material impacts an object, due to geometry of the material the molecules are scattered in various directions.

Ababeel (Swallow)

A small bird which carried three stones, one in beak and two in each feet. These birds did not miss their targets similar to **laser guided missile technology**. These birds are also mentioned in biblical stories that swallows tried to distract the enemy of Jesus who were trying to arrest him in the garden for crucifixion or the birds were trying to comfort Jesus on the cross.

DEDICATION

I am dedicating this research paper to my Late parents Yusuf Ali and Sakina Mooman, my Late Brother Munawar Husain Mooman, my Late grand mother Khadeja Mulji who helped me to come to America, Late Rashid Mulji and Kulli Momin and Mominaats. May Allah and fourteen Infallibles rest the souls in Elliyeen. Ameen

ACKNOWLEDGEMENT

I am thankful to Dr. Ahmed Tawfik who is from Arab origin and has a Ph.D in Chemical Engineering for contributing his ideas in this research paper.

BACKGROUND

When the Persians were driven away by the Byzantine Roman Empire or Roman Empire in Yemen, Abraha was installed as a governor of Yemen by Abyssinia King now Ethiopia. Persia ruled much of the world for 7 centuries in the Middle East and the Romans ruled in Constantinople. It was like Russia and Americas of present time with their proxy empire in the world. Abraha did not appreciate Arabs going on pilgrimage every year to Kaaba in Mecca. He built a grand church in Sanaa, Yemen and desired that Arabs come to this church every year instead of Kaaba. Abraha was unable to divert the Arabs from Mecca to Sanaa as Arabs considered Kaaba build by their forefathers Abraham and Ishmael their pride and therefore, their sincerity was towards Kaaba. As a result Abraha was furious and invaded Mecca with a strong army equipped with elephants. When

Abraha reached the vicinity of Mecca, he sent his commanders to Mecca where they looted the few belongings of the Quraish and other Arabs, including two hundred camels of Abdul Muttalib ibne Hashimm who was the chief of Mecca. (Abdul Muttalib is the grandfather of Prophet Muhammad and Father of Abu Talib and Abdullah). Abraha sent his messenger to the chief of Mecca conveying his intention of marching to Mecca was not to fight the Meccans but to destroy Kaaba. He invited Abdul Muttalib to have an audience with him. During the conversation Abdul Muttalib asked Abraha to release his camels. Abraha informed Abdul Muttalib that he was disappointment in him for asking him to return the camels and not mentioning him to spare Kaaba for which he has marched from Yemen. Abdul Muttalib replied that I am master of camels and the master of Kaaba is Allah who is sure to protect it. Abraha returned Abdul Muttalib camels to him. Abdul Muttalib briefed Meccans about his meeting with Abraha and ordered the Meccans to take shelter in the surrounding mountains, (it is reported that the mountains were in Mujdelfa a place between Mecca and Mina where Hajis during Hajj spent the night before entering Mina on 10th of Zilhajj). Abdul Muttalib with few Quaraish went to the Kaaba where he held the ring of its door in his hand. They all prayed to Allah for His help. When Abraha was marching toward Kaaba groups of birds appeared in the sky. Each bird was carrying three stones, one in their beaks and two with their feet and stoned the attackers. When Abdul Muttalib saw the birds he ordered the Meccans to come out from the shelter and go back to their houses as Allah's help has arrived. The birds destroyed Abraha's army and it is mentioned in Quran the army was converted to dry and torn leaves like in a hay field. Abraha himself suffered injuries and his remainder army retreated and carried him to the Sanaa. It is reported that Abraha's limbs was separating from his body loosing one finger after another on his way back to Sanaa, Yemen and finally his chest broke apart and he died after reaching Sann, Yemen.

In Arab this incident is remembered as **Year of Feel (elephant) which occurred in 570 AD**. Prophet Muhammad (S.A.) was born in that year.

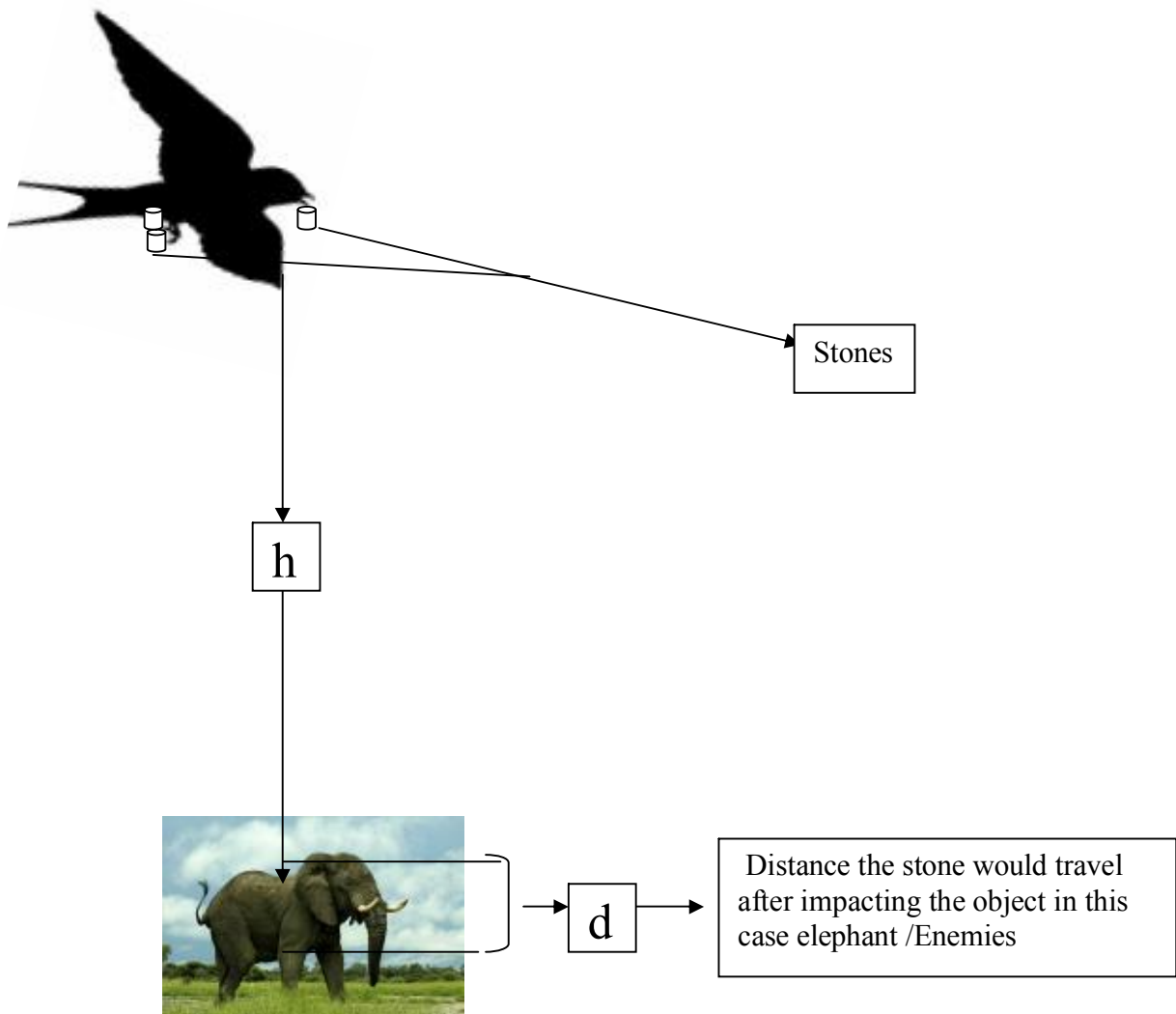
CALCULATING THE FORCE

Assumptions

- There is no evidence that the stones missed their target. Hence, there was no\ flotation of the stone in the air, therefore, bouncy due to air is considered zero (0).
- Since the stone thrown by the birds came on the earth specifies that gravitational force (g) was acting on the stone.

(In Seventies an article about the incident of Feel was printed in National Geography. It was mentioned that the stone was of hard clay. An Arab family had one of the stone for generation and gifted it to Suad King Faisal)

- Few parameters and variables have been deliberately not taken into consideration for example, initial and final velocity of the falling stone and drag or resistance of the air, etc. to keep the equation simple.



Potential Energy is defined as Force times Distance

By definition acceleration is Force divided by mass

$$a = \frac{F}{m}$$

Newton's Second Law of motion

or $F = ma$ that is Force is mass **times** acceleration..... (1)

where $F = \text{Force}$

$m = \text{mass}$

$a = \text{acceleration}$

Calculating for force when the birds ababil (swallow) dropped stone from the sky

Force/Energy = Potential Energy + Kinetic Energy

$$Mgh + \frac{1}{2} MV^2 \dots\dots\dots (2)$$

Kinetic Energy is considered because in Ayat # 4 of the Sura 105 the word tarmeehim is used. Termeehim means to throw that utilizes force and velocity.

In equation (2) known are
m = the mass of the stone
g = gravitational force

Unknown are
h = the height which includes the penetration into the object after impact
v = velocity of the object

$$F = m \text{ times } a \dots\dots\dots(1)$$

That is Force is directly proportional to mass

Solving equation(2) for h and v

$$F = ma$$

M is known
a = ?

By definition velocity is equal to

$$V^2 = 2ad$$
$$\text{Or } a = V^2 / 2d \text{ -----(3)}$$

Where V = Velocity
D = distance/Penetration

And by definition velocity is also equal to

$$V^2 = 2gh \text{ -----(4)}$$

Substituting the valve of V² into equation ...-----(3)

$$a = V^2 / 2d$$

$$= 2gh/2d$$

$$a = gh/d \text{ -----(5)}$$

$$F = ma \text{ -----(1)}$$

Substituting the value of a equation (5) into equation (1)

$$F = gh/d \text{ times } m$$

$$\text{Or } mgh/d \text{ -----(6)}$$

$$\text{Or } F = \frac{\text{Potential Energy}}{\text{Distance traveled by stone after impacting the object}}$$

$$\text{Force/Energy } Mgh + \frac{1}{2} MV^2 \text{ ----- (2)}$$

$$Mgh/d + Mgh/d \text{ (Kinetic Energy becomes Potential energy after after substituting the value of } V^2 \text{ into equation ---2)}$$

$$\text{or } \text{Force/Energy} = 2Mgh/d \text{ -----(7)}$$

In equation (7) known are

m = mass is (stone dropped by the birds)

g = gravitational force

h = height from where stone was dropped
assume 500 ft as the birds were visible

d = distance the stone will travel after impacting the object

Object in this case is elephant/enemy. The average height of elephant is 12 ft

If the impact was at back of the elephant then we can assume that the stone traveled around 3 to 4 ft in the body of the elephant excluding the feet

height of the Elephant 12 ft

Subtract the legs 6 ft

distance to travel 6 ft

Total distance travel 4 ft

Assuming the stone remained in the body

Calculating for impact or work done by the stone after impact

$$F = \frac{1}{2} m V^2 \text{ -----(8)}$$

$$\text{Substituting for } V^2 \text{ from equation -----(4)}$$

$$F = \frac{1}{2} m \times 2gh$$

Or $F = mgh$ which is again potential energy

Again there is penetration into the body so h becomes h/d

$$\text{Total Force} = 2mgh/d + mgh/d$$

Or $3mgh/d$ 3 times potential energy/penetration
(Includes Potential Energy + Kinetic Energy + Work Done)

This is the total force that could have killed the elephants and the enemy

Problem/Example

mass 0.125 lbs

height 500 ft

distance is 4 ft

Calculate the force

$$\text{Total Force} = 2mgh/d + mgh/d \text{ (work done)}$$

$$2(0.125 \text{ lb} \times 35.1 \text{ ft/s}^2 \times 500 \text{ ft}/4 \text{ ft}) + 0.125 \text{ lb} \times 35.1 \text{ ft/s}^2 \times 4 \text{ ft}/4 \text{ ft}$$

$$4387.5 \text{ lb ft/s}^2 + 4.3875 \text{ lb ft/s}^2$$

$$\text{One stone that strike the elephant} = 4391.89 \text{ lb ft/s}^2 \text{ or lbf}$$

CONCLUSION/ANALYSIS

(A) The stone not only destroyed the army and elephants but according to Quran the battlefield became a field of dry and torn leaves. This leads us to

- a) The stones dropped by the birds contained germs or bacteria that ate the flesh and bones and left the skin like dry leaves.
- b) The stones may have some nuclear capability that radiated in the body and destroyed the flesh and the bones.
The above two statement leads us to the Nuclear Age 1400 years ago.

(B) Abdul Mutallib told Abraha that Allah will take care of Kaaba

This statement indicates the faith of Abdul Muttalib in Allah before the declaration by Muhammad son of Abdullah his prophethood forty years later. Abdul Muttalib was the grandfather of Prophet Muhammad (S.A.) and father of Abu Talib and Abdullah. He died many years ago before the declaration of prophethood by his grandson.

(C) The stones fell towards the earth which leads us to

- a) Gravitational Force was acting on the stone. Newton developed the laws of motion after observing an apple dropping from the tree. In the above incident the Meccans and the Abrahama army witnessed the stones dropping towards the earth. The Persians and the Romans heard about the incident how Abrahama was humiliated. We conclude that Allah provided the phenomenon for the further development of gravitational force.

Since that day nobody had the courage to attempt to destroy Kaaba in Mecca Saudi Arabia.

- b) Flintlock gun or BB gun which is a firearm with a firing mechanism gunlock that has a flint embedded in the hammer. The flint ignites gun powder charge to produce spark. This type of firearms were used by the British in India called tablacha. British ruled India and all over the world due to invention of gun powder and flintlock or BB guns. The invention is based on Sura Feel incident. The height is eliminated by the utilization of a spring which store kinetic energy when compressed. When the lever is released the projectile (stone) travels through confined space that is into barrel direction thus piercing the skin of the target. The maximum velocity of such guns is 450 sec square. The velocity decreases with distance and therefore the target should be within striking distance that is about 500 ft. Therefore we assume the height from where the stone was drooped to be 500 feet.

Next issue Calculation of Namaz timing by scientific methods