

BRAINY MYTHOS

COLLECTION OF ANECDOTES OF FAMOUS SCIENTISTS

DEPARTMENT OF PHYSICAL SCIENCE
P. K. M COLLEGE OF EDUCATION, MADAMPAM

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PREFACE

This book has been written to serve as an information gathering for the students. Hence the selection and organization of its contents, has been the major guiding factor of the teacher. One of the main features of the book is that it covers all the scientists included in the syllabus of upper primary to High school.

The treatment of this is done in a manner that would help not only the students but also the teachers to develop an insight into the science and it will encourage them to study science.

‘**BRAINY MYTHOS**’ is a compilation of the life history and important incidents of the lives of thirty five scientists. It includes their birth, contributions, awards, death and thrilling stories related to them.

Sub - editors

ACKNOWLEDGEMENT

P.K.M. College of Education, Madampam

We wish to record our great gratitude and immense indebtedness to Dr. Stephen.T.A, Principal, P K M College of Education, Madampam who has blessed us in the writing of this book and for his valuable suggestions and advices.

Our sincere thanks to all our classmates ; Abin , Ashlin, Babisha, Bijisha, Chithra, Dilna, Femi, Hansel, Manu, Sreelaya, Shajina, Salu, Shuhaima, Shahana, Ramya, Veena for providing all the facilities required for this work. We also express our sincere thanks to the department of Physical Science and library.

Sub-editors

ARCHIMEDES (BC 287- 212)



- BORN : 287 BC, SYRACUSE
- CONTRIBUTIOS :
 - ▶ FORMULATED THE LAW OF FLOATATION OF BODIES
 - ▶ DEFINED THE VALUE OF π (π)
 - ▶ STUDIED THE PROPERTIES OF LIGHT
 - ▶ OBTAINED FORMULAE FOR THE CURVED SURFACE AREAS AND VOLUMES OF VARIOUS SOLIDS
- DEATH : 212 BC, SYRACUSE (SICILY)

EUREKA, EUREKA.....

Archimedes examined the problem very carefully, but could not solve it at once. It is said that the solution of the problem flashed in his mind suddenly when he was lying in his bath tub. He noticed how, when he got in the bath tub, his body displaced the water, making the water level in the bath tub rise. He jumped out and ran down the street naked, shouting “Eureka, Eureka” (I have found it). On the basis of this discovery, he was able to estimate the extent of impurity in the gold crown.

				1 S.N. BOSE	2	3
4 ISAAC NEWTON	5	6	7	8	9	10
11	12	13	14	15	16	17 BENJAMIN FRANKLIN
18	19	20 ANDRE MARIE AMPERE	21	22	23	24
25	26	27	28	29	30 JAMES WATT	31

JANUARY

SATYENDRA NATH BOSE (1894-1974)



- BORN : JANUARY 1, 1894, CALCUTTA
- CONTRIBUTIONS :
 - ▶ BOSE – EINSTEIN STATISTICS
 - ▶ INTRODUCED BOSONS
 - ▶ DERIVED RYDBERG LAW IN THE OLD QUANTUM THEORY
- AWARDS :
 - CIVILIAN AWARD
 - PADMA VIBHUSHAN (1954)
- DEATH : FEBRUARY 4, 1974, CALCUTTA

110 MARKS OUT OF 100

In school, he once obtained 110 marks out of 100 in the mathematics paper, because he had solved some sums in more than one way. His teacher predicted that he would one day become a great mathematician. His rival classmates knew that they would not get the first position in the university as long as S.N. Bose was there in the class. Because of this fear, quite a few of his classmates changed their subjects and some events did not appear in the examination that year.

SIR ISAAC NEWTON (1643-1727)

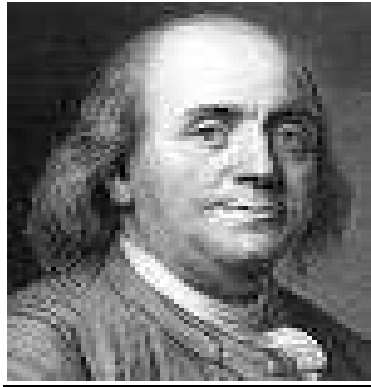


- BORN : JANUARY 4, 1643
- FATHER OF PHYSICS
- CONTRIBUTIONS :
 - ▶ NEWTON'S LAW OF MOTION
 - ▶ APPLICATION TO DYNAMIC
 - ▶ FORMULATED CLASSIC THEORIES OF MECHANICS AND OPTICS
 - ▶ INVENTED CALCULUS
 - ▶ THEORY OF SOUND
 - ▶ NEWTON'S WAVE THEORY
- DEATH : MARCH 31, 1727, LONDON

AN APPLES STORY

In 1665, Newton returned to his village wools Thorpe, for holidays and on a fine morning, while sitting beneath an apple tree in his background, he saw an apple falling on to the tree to the ground. He started wondering as to why it did not go up or to the left or to the right. His reasoning mind concludes that it must be due to a certain attraction of the earth that made the apple fall down to the ground. This observation and conclusion of Newton gave birth to this ‘Law of Universal Gravitation’ which made him to be called father of physics.

BENJAMIN FRANKLIN (1706 – 1790)



➤ BORN : JANUARY 17, 1706 , IN BOSTON

➤ CONTRIBUTIONS : ► LIGHTNING CONDUCTOR

► BI-FOCAL EYE GLASSES

➤ DEATH : APRIL 17 , 1790

CHARGED CLOUDS....

In 1752, Benjamin Franklin conducted an experiment in connection with electrically charged clouds. He flew a homemade kite during a thunder storm. The kite was made of a silken cloth mounted on wooden cross. About one foot of iron wire was protruding above the kite. A key was tied to the end of the metal string connected with the kite and the other end of the key was tied to a silken ribbon which Franklin held while flying the kite. A bolt of light struck the kite wire and travelled down to the key causing a spark. This proved that the lightning is electricity. It also proved that large electrically charged clouds can be brought to the earth. On the basis of this, Franklin invented the lightning rod for the safety of buildings from lightning of clouds.

ANDRE- MARIE AMPERE (1775-1836)



- BORN : JANUARY 20, 1775, LYON
- CONTRIBUTIONS :
 - ▶ AMPERE'S LAW
 - ▶ WORK IN ELECTROMAGNETISM
 - ▶ FOUNDATION OF
ELECTRODYNAMICS
- DEATH : JUNE 10, 1836, FRANCE

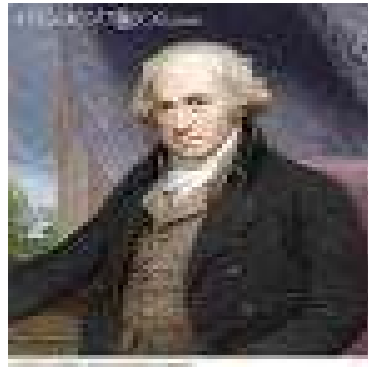
FROM PARIS TO AMPERE

The French scientist Ampere was on his way to an important meeting at the academy in Paris. In the carriage he got a brilliant idea which he immediately wrote down..... On the wand of the carriage:

$$dH = i \, pdl / r^2$$

As he arrived he payed the driver and ran into the building to tell everyone. Then he discovered his notes were on the carriage and he had to hunt through the streets of Paris to find his notes on wheels.

JAMES WATT (1736-1819)



- BORN : JANUARY 30, 1736, UNITED KINGDOM
- CONTRIBUTIONS :
 - ▶ IMPROVEMENT STEAM ENGINE
 - ▶ MAKER OF MATHEMATICAL INSTRUMENT
 - ▶ INVENTION ROTARY ENGINE,
 - ▶ DOUBLE ACTION ENGINE AND STEAM INDICATOR
- DEATH : AUGUST 25, 1819

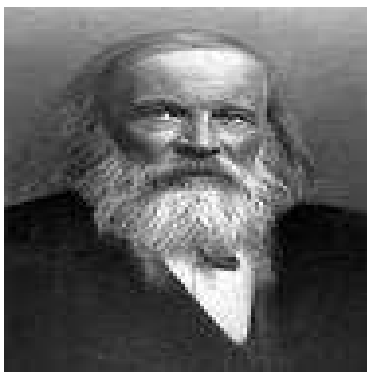
AN OLD WASHING HOUSE

I had gone to take a walk on a fine Sabbath afternoon, early in 1765. I had entered the green by the gate at the foot of charlotte street and had passed the old washing –house. I was thinking upon the engine at the time, and had gone as far as the herd’s house, when the idea came into my mind that as steam was an elastic body it would rush into a vacuum, and if a communication were made between the cylinder and exhausted vessel it would rush into it, and might be there condensed without cooling the cylinder. I then saw that I must get the rid the condensed steam and injection water if I used a jet as in Newcomen’s engine. Two ways of doing this occurred to me. First, the water might be run of by a descending pipe, if an off let could be got at the depth of 35 or 36 feet, and any air might be extracted by a small pump. The second was to make the pump large enough to both water and air.....I had not walked further than the golf –house when the whole thing was arranged in my mind.

FEBRUARY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8 MENDELEEV	9	10	11	12	13	14
15 GALILEO GALILEI	16	17 THOMAS ALWA EDISON	18	19	20	21
22	23	24	25	26	27	28 NATIONAL SCIENCE DAY

MENDELEEV (1834-1907)



- BORN : FEBRUARY 8, 1834, RUSSIA
- CONTRIBUTIONS : ► WORK ON PERIODIC TABLE
 - STATING PERIODIC LAW
- AWARDS :
 - DAVI MEDAL(1882)
 - COPLEY MEDAL
- DEATH : FEBRUARY 2, 1907, RUSSIA

BOOKWORM PROFESSOR

A good example of Mendeleev's lifestyle as a field researcher rather than a "bookworm professor" was his aerostat flight in 1887. The hydrogen aerostat was meant to lift the scientist high enough to have unobstructed view of a solar eclipse, a rare chance to study the solar corona. However the day of the event was rainy, the balloon got wet and too heavy to lift both the pilot and the scientist. A more vivid, albeit less accurate account says Mendeleev first threw out the pilot from the basket, then all the furniture, and went into the sky.

GALILEO GALILEI (1564-1642)



- BORN : FEBRARY 15, 1564, ITALY
- FOUNDER OF MODERN EXPERIMENTAL PHYSICS
- CONTRIBUTIONS :
 - ▶ INVENTED THE TELESCOPE
 - ▶ DISCOVERED GALILIAN THERMOMETER
 - ▶ DISCOVERY OF LUNAR MOUNTAINS AND VALLEYS
 - ▶ INVENTED COMPOUND MICROSCOPE
 - ▶ USE OF PENDULAM IN CLOCKS
- DEATH : JANUARY 8, 1642, ITALY

HUNG FROM THE ROOF BY A CHAIN

When he was 17 years old, one evening he went to church to pray. It was getting dark and the care taker was lighting the candles in the Candelabra which hung from the roof by a chain. When he left it, it started swinging to and fro. Young Galileo observed it keenly and noticed that the time taken in each swing was the same. There was no watches during those days to measure the timing, but being a medical student he knew that the beat of the human pulse is fairly regular. To prove his observation he counted the number of pulse beats for each swing. He observed that each swing, whether big or small, took the same time. On the basis he made an instrument which is known as pulse meter.

THOMAS ALVA EDISON (1847-1931)



- BORN : FEBRUARY 11, 1847,U.S
- CONTRIBUTIONS : ► INVENTION OF THE MOTION
PICTURE CAMERA
► INVENTION OF ELECTRIC
BULB
- AWARDS : ● TECHNICAL GRAMMY
AWARD
● GRAMMY TRUSTEES AWARD
- DEATH : OCTOBER 18, 1931, U.S

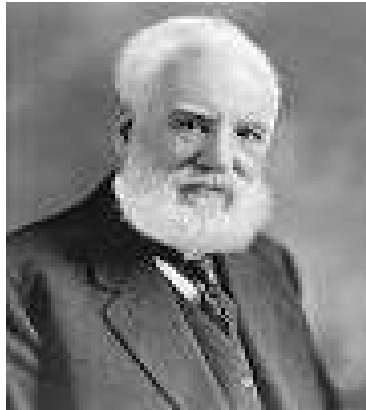
THE BIRD HOUSE

Mina was such a lover of nature, and birds watching. Tomas came to the rescue at Glenmont by electrifying one of the bird feeders outside the conservatory, so water in it would not freeze in the winter. An electrical switch in the Edison bedroom, just above the conservatory allowed the bird feeder to be heated. The bird house is still there.

MARCH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 ALEXANDER GRAHAM BELL	4	5	6	7
8	9	10	11	12	13	14 ALBERT EINSTEIN
15	16 GEORG SIMON	17	18	19	20	21
22	23	24	25	26	27 WILHELM KONARD ROENTGN	28
29	30	31				

ALEXANDER GRAHAM BELL(1847-1922)

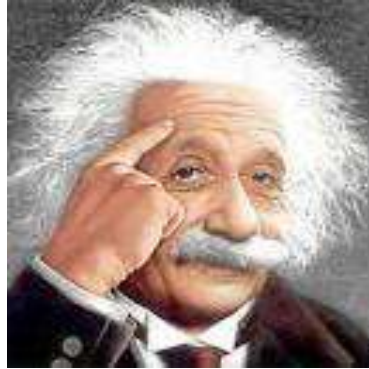


- BORN : MARCH 3, 1847, SCOTLAND
- CONTRIBUTIONS : INVENTED TELEPHONE IN 1876
- AWARDS :
 - ELLIOTT CRESSON MEDEL
 - JOHN FRITZ MEDEL
 - HUGHES MEDEL
- DEATH : AUGUST 2, 1922, CANADA

WATSON, WATSON, COME HERE I NEED YOU

On 2nd June 1875, Bell was work in his laboratory along with his assistant Thomas Watson. They were doing some experiments in sending several telegraph signals over one wire at the same time. During these experiments, Bell came interested in sending voice over a wire. One day, Bell was working on his telegraph receiver in one room while Watson was working in the other room. Ball was trying to hear something in his receiver. When the vibrations in the wires were stopped Watson produced some sound with his fingers. This sound was heard by Bell. He came very happy with this achievement, and went running to Watson and told him that he had heard the fingers. After that they did some more experiments. Bell's first words on telephone were: "Watson, Watson, come here I need you". After making many improvements, Bell was issued a patent in 1876. A year later, he founded the Bell Telephone Company.

ALBERT EINSTEIN (1879-1955)



- BORN : MARCH 14, 1879, GERMANY
- FATHER OF MODERN PHYSICS
- CONTRIBUTIONS :
 - ▶ DEVELOPED THE GENERAL THEORY OF RELATIVITY
 - ▶ FORMULATED THE MASS-ENERGY EQUIVALENCE FORMULA $E = MC^2$.
 - ▶ PHOTO ELECTRIC EFFECT
 - ▶ THEORY OF BROWNIAN MOTION
 - ▶ DEVELOPED QUANTUM THEORY
- AWARDS :
 - NOBEL PRIZE IN PHOTOELECTRIC EFFECT IN 1921
 - GOLD MEDAL OF ROYAL
 - ASTRONOMICAL SOCIETY (1926).
- DEATH : APRIL 18, 1955

BREAKING SILENCE

- ❖ As Einstein was a late talker, his parents were worried. At last at the supper table one night, he broke his silence to say, “the soup is too hot ”. Greatly surprised, his parents asked why he had never said a word before. Einstein replied, “ because up to now everything was in order”.

- ❖ Einstein came to Princeton University in 1935 and was asked what he would require for his study. He replied : “A desk, some pads and a pencil, and a large waste basket to hold all my mistakes.

GEORGE SIMON OHM (1789-1854)



- BORN : MARCH 16, 1789, GERMANY
- SI UNIT OF ELECTRICAL RESISTANCE WAS NAMED AFTER HIM AS THE OHM
- CONTRIBUTION :
 - ▶ OHM'S LAW
 - ▶ OHM'S PHASE LAW
 - ▶ OHM'S ACOUSTIC LAW
- AWARD : COPLEY MEDAL (1841)
- DEATH : JULY 6, 1854

GALVANIC ELECTRICITY

Ohm's first work was an elementary geometry text, which embodied his ideas on the role of mathematics in education. The student, he believed, should learn mathematics as if it were the free product of his own mind, not as a finished product imposed from without. Ideally, by fostering the conviction that the highest life is that devoted to pure knowledge, education should create a self-reliance and self-respect. One detects in these sentiments the reflection not only of his own early education but also of the years of isolation in Switzerland and of personal and intellectual deprivation at Bamberg. The resulting inwardness of Ohm's character and the highly intellectualized nature of his ideals of personal worth were an essential aspect of the man who would bring the abstractness of mathematics into the hitherto physical and chemical domain of galvanic electricity.

WILHELM KONARD ROENTGEN (1845-1923)



- BORN : MARCH 27, 1845, GERMANY
- CONTRIBUTIONS : X- RAYS
- AWARDS :
 - MATTEUCCI MEDAL (1896)
 - RUMFORD MEDAL (1896)
 - ELLIOTT CRESSON MEDAL
 - BARNARD MEDAL (1900)
 - NOBEL PRIZE IN PHYSICS
- DEATH : FEBRUARY 10, 1923, GERMANY

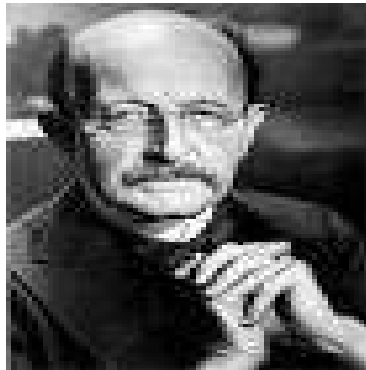
UNKNOWN RAYS

The story behind the discovery of X-rays is very interesting. One day Prof. Roentgen was experimenting with electric discharge of gases in a partially evacuated glass tube in his laboratory. There was complete darkness in the room, and the cathode ray tube was covered with a black paper. While experimenting, Roentgen observed that a crystal of barium platinocyanide, lying near the cathode ray tube, emitted fluorescence when the tube was in operation. He theorized that some unknown rays were passing through the covered walls of the tube which, on interacting with the crystal, caused fluorescence. Roentgen was thrilled at this discovery.

APRIL

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23 MAX PLANK	24	25
26	27	28	29	30		

MAX PLANK (1858-1947)



- BORN : APRIL 23, 1858, GERMANY
- FATHER OF QUANTUM THEORY
- CONTRIBUTIONS :
 - ▶ DISCOVERED QUANTUM
 - ▶ FUNDAMENTAL UNIT OF ENERGY (1900)
 - ▶ PLANCK'S CONSTANT
$$E = hf$$
- AWARDS : NOBEL PRIZE IN PHYSICS (1918)
- DEATH : OCTOBER 4, 1947

70 YEARS OLD TEACHER

Planck decided to devote his life to physics, he told his 70 years old teacher, Philip jolly who used to teach in Munich University, about his decision. The teacher tried to dissuade Planck explaining that all the possible research in theoretical physics had already been done and there was nothing to discover in it.

MAY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31					1	2
3	4	5	6	7	8	9
10	11 RICHARD FEYNMAN	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

RICHARD FEYNMAN (1918-1988)



- BORN : MAY 11, 1918, NEW YORK
- CONTRIBUTIONS :
 - ▶ THEORY OF QUANTUM ELECTRODYNAMICS
 - ▶ THEORY OF THE SUPERFLUIDITY OF SUPER COOLED LIQUID HELIUM
 - ▶ DEVELOPMENT OF QUANTUM ELECTRODYNAMICS
- AWARDS : NOBEL PRIZE IN PHYSICS (1965)
- DEATH : FEBRUARY 15, 1988

$AB \neq BA$

One day in class Feynman was talking about angular momentum. He described rotation matrices and mentioned that they did not commute he said that Sir William Hamilton discovered non combatively one night when he was taking a walk in his garden with lady Hamilton. As they sat down on a bench, there was a moment of passion. It was then that he discovered that $AB \neq BA$

JUNE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19 BLAISE PASCAL	20
21	22	23	24	25	26	27
28	29	30				

BLAISE PASCAL (1623-1662)



- BORN : JUNE 19, 1623, FRANCE
- PASCAL IS A UNIT OF PRESSURE
- CONTRIBUTIONS :
 - ▶ INVENTED MECHANICAL CALCULATOR
 - ▶ ATMOSPHERIC PRESSURE COULD BE ESTIMATED IN THE TEARMS OF WEIGHT
- DEATH : AUGUST 19, 1662

THE NATURE OF GEOMETRY

Pascal's father began his son's education with a course of reading in ancient language. When the nine-year-old Pascal inquired as to the nature of geometry, he was told that it was the study of shapes and forms. The boy immediately proceeded to discover for himself the first 32 theorems of Euclid in the correct order. The elder Pascal saw that it was no use attempting to steer his son away from Mathematics and allowed him to pursue his studies as he wished.

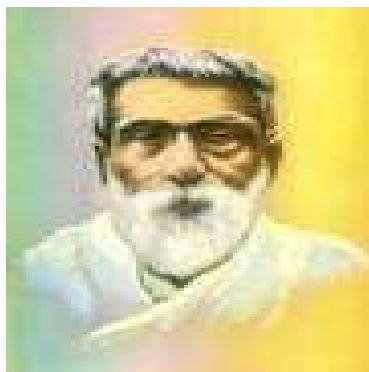
JULY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21 LUNAR DAY	22	23	24	25
26	27	28	29	30	31	

AUGUST

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31					1
2 PRAFULLA CHANDRA RAY	3	4	5	6	7	8
9	10	11	12 VIKRAM SARABHAI	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

PRAFULLA CHANDRA RAY (1861-1944)



- BORN : AUGUST 2, 1861, BANGLADESH
- FATHER OF INDIA'S CHEMICAL INDUSTRY
- CONTRIBUTIONS : ► DISCOVER OF MERCURONS
NITRITE (1896)
► EXTRACTION OF DERIVATIVES
- DEATH : JUNE 16, 1944

CHEMICAL COMPOUND FROM CATTLE BONES

It was famous with his cattle bone experiment. For this experiment he bought many cattle bones from butcher to his lab which in his house. Because of its bad odor neighbors began to complain.

One evening he made fire in order to drive the bones and also to conduct some experiment. Then police arrived there to enquire about this and Ray had tough time to convince them that he was not murderer and it was not human bones.

He did not stop this experiment by this incident. By this experiment he converted the waste cattle bones into a chemical compound can be made. Then he started to produce the tonic in large scale.

VIKRAM SARABHAI (1912-1971)



- BORN : 12 AUGUST, 1912
- FATHER OF INDIAN SPACE PROGRAMME
- RENAISSANCE MAN
- CONTRIBUTIONS :
 - ▶ ESTABLISHED PHYSICAL RESEARCH LABORATORY (1947)
 - ▶ ESTABLISHED VIKRAM SARABHAI SPACE CENTRE
- AWARD :
 - PADMA BHUSHAN (1966)
 - PADMA VIBHUSHE
- DEATH : DECEMBER 30, 1971

CYCLING STUNT

As a young boy sarabhai loved a few cycling stunt. After his bicycle gained sufficient momentum, he would cross his arm over his chest and place his feet on the handle bars. If the road a head was straight he would shut his eyes and let the bicycle carry him as far as it would go. All this while the terrified servants chased him and begged him to stop.

LORD RUTHERFORD (1871-1937)



- BORN : AUGUST 30, 1871, NEW ZEALAND
- CONTRIBUTIONS :
 - ▶ INTERNAL STRUCTURE OF AN ATOM
 - ▶ DISCOVERED TWO DISTINCTIVE TYPE OF RADIATION EMITTED, BY THORIUM AND URANIUM WHICH HE NAMED α, β, γ .
 - ▶ DISCOVERED AN ATOM
 - ▶ DISCOVERED PROTON
 - ▶ DEVELOPED THE MODEL OF NUCLEUS
- AWARD : NOBEL PRIZE IN CHEMISTRY
- DEATH : OCTOBER, 19, 1937

STRUCTURE OF ATOM

In Cavendish laboratory, he began his study of radio activity. He discovered that there were different kinds of rays given off by radioactive substance. He called some alpha rays and other beta rays. These names are used even today. With the help of alpha rays he studied the structure of atom and found that most of the mass is located in the tiny nucleus.

SEPTEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6 JOHN DALTON	7 AUGUST KEKULE	8	9	10	11	12
13	14	15	16 GEOGRE SUDARSAN	17	18	19
20	21	22 MICHAEL FARADAY	23	24	25	26 ENRICO FERMI
27	28	29	30			

JOHN DALTON (1766-1844)



- BORN : 6 SEPTEMBER, 1766, ENGLAND
- ENGLISH CHEMIST
- CONTRIBUTIONS : ► THEORY OF COLOUR
BLINDNESS
► EXPLAINED ATOMIC THEORY
- AWARD : ROYAL MEDAL IN 1826
- DEATH : JULY 27, 1844, U.K

COLOUR -BLINDNESS

When a boy had gone to see a review of troops, and hearing the crowd around him speak of the gorgeous effect of the military uniforms in the masses of soldiers manœuvring before them, he asked, in good faith and simplicity, what was the difference between the soldier's coats and grass they were walking on a question which his companions received with derisive laughter and exclamations of wonder. Dalton showed that so far from this defect from this defect being and he described the cases of more than 20 persons similarly constituted. Since then, colour -blindness has taken a recognized place among the ills that human beings are "heir to."

FRIEDRICH AUGUST KEKULE (1829-1896)



- BORN : SEPTEMBER, 7, 1829, GERMANY
- CONTRIBUTIONS :
 - ▶ DISCOVERED CARBON ATOMS ARE TRIVALENT
 - ▶ DISCOVERED STRUCTURE OF BENZENE
- DEATH : JULY 13, 1896, GERMANY

A SNAKE

There is a famous story about one of Kekule's discoveries of the structure of benzene. Benzene is a well-known carbon compound and is of great industrial importance. Kekule, in 1865, was researching about the structure of this compound. One night, in 1865, Kekule had a dream in which he saw a snake coiled in a circular shape with its tail in its mouth. Kekule saw in the image a possible arrangement of atoms that might describe the benzene molecule. From this dream his concept of the six carbon benzene ring was born.

GEORGE SUDARSAN (1931)

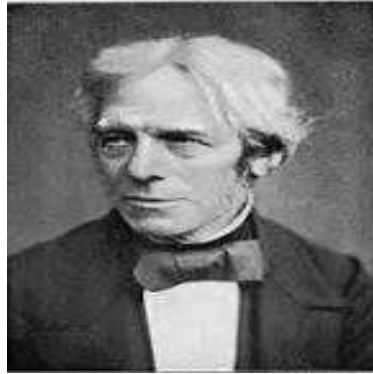


- BORN : SEPTEMBER 16, 1931, KERALA
- CONTRIBUTIONS :
 - ▶ ELEMENTARY PARTICLE PHYSICS
 - ▶ QUANTUM OPTICS
 - ▶ QUANTUM FIED THEORY
 - ▶ GUAGE FIELD THEORIES
 - FOUNDATION OF PHYSICS
- AWARDS :
 - PADMA VIBHUSHAN (1976)
 - FIRST PRIZE IN PHYSICS
 - THIRD WORLD ACADEMY OF SCIENCE(1985)

‘TAKIONS’

The legend in the world science history Albert Einstein in his theory confirmed that the light particles that in photons have the most speed compared to any other particle that is existing. But it the Indian Physicist Dr. E C George Sudarsan proved that there is some other particle which can have the velocity very much greater than that of light. He called the particles as **‘takions’**. But he never said the theories of Einstein were wrong. It proves his humbleness.

MICHAEL FARADAY (1791-1867)



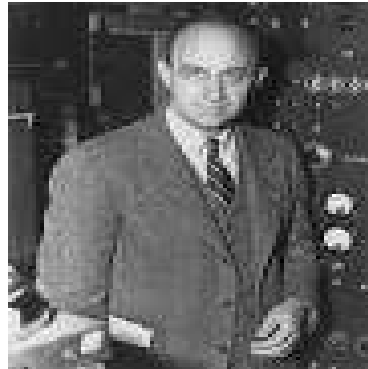
- BORN : 22 SEPTEMBER 1791 , ENGLAND
- CONTRIBUTIONS :
 - ▶ INVENTION OF GENERATOR.
 - ▶ FORMULATED THE LAW OF ELECTROMAGNETIC INDUCTION.
 - ▶ IN 1831 HE MADE THE FIRST DYNAMO.
 - ▶ DISCOVERED PARAMAGNETISM, DIAMAGNETISM.
 - ▶ DEVELOPED THE LAWS OF ELECTROLYSIS IN 1834.
- DEATH : 25 AUGUST 1867, HAMPTON COURT

DEFLECTION OF GALVANOMETER

One famous incident of Faraday's life is worth mentioning. When he invented Electromagnetic induction. He presented an experiment to demonstrate it before many people who came from all over the world. Among the spectators was a lady with her young baby. Faraday took a coil of copper wire and connected its ends to a galvanometer. He inserted a bar magnet in to the coil with the insertion of the magnet the needle of the galvanometer moved, indicating generation of electricity. When he removed the magnet, the needle moved back. Faraday explained to the audience that this was the basis of generating electricity.

When the demonstration was over the lady became angry. "Is it an experiment? Have you called the people to be fool them?." She asked Faraday. He replied politely, " Madam, just as your child is quite young, so is the case with my experiment. So far it is like a baby. In future, it may be of almost importance.

ENRICO FERMI (1901-1954)



- BORN : 29 SEPTEMBER 1901, ROAM, ITALY
- CONTRIBUTION :
 - ▶ INVENTION OF NUCLEAR REACTOR.
 - ▶ DISCOVERED THE CHAIN REACTION.
- AWARDS :
 - 1938, NOBEL PRIZE IN PHYSICS.
 - 1946 MARCH 19 – MEDAL OF MERIT BY THE CONGRESS OF UNITED STATES
- DEATH : 28, NOVEMBER 1954, CHICAGO

DEVOTION TO SCIENCE

The following incident of Fermi's life is very famous. It shows how he was totally absorbed in his experimental work. One day, Fermi was on his way to an adjoining room to bring an instrument for an experiment. Meanwhile, a stranger came to meet him. On coming across Professor Fermi, the visitor told him that he wanted to see professor Fermi. Professor Fermi's mind was so much involved in his experiment that he asked the man to wait for some time in the room promising to send the professor to him shortly. After this, he went to his room, finished his experiment and came back to the stranger, "I am Fermi. What can I do for you?" The visitor surprised at Fermi's devotion to science.

OCTOBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10 HENRY CAVENDISH , S CHANDRA
11	12	13	14	15 EVANGELISTA TORRICELLI	16	17
18	19	20	21 ALFRED NOBEL	22	23	24
25	26 SIR JAMES CHADWICK	27	28	29	30	31

HENRY CAVANDISH (1731-1810)



- BORN : OCTOBER 10, 1731, FRANCE
- CONTRIBUTIONS :
 - ▶ DISCOVERED HYDROGEN
 - ▶ DISCOVERED COMPOSITION OF ATMOSPHERIC AIR
 - ▶ SYNTHESIS OF WATER
 - ▶ TO CALCULATE THE MASS AND DENSITY OF EARTH
- AWARDS : COPLEY MEDAL
- DEATH : FEBRUARY 24, 1810, LONDON

TWISTING FORCE

The two large balls were positioned on alternate sides of the horizontal wooden arm of the balance. Their mutual attraction to the small balls caused the arm to rotate, twisting the wire supporting the arm. The arm stopped rotating when it reached an angle where the twisting force of the wire balanced the combined gravitational force of attraction between the large and small lead spheres. By measuring the angle of the rod and knowing the twisting force (torque) of the wire for a given angle, Cavendish was able to determine the force between the pairs of masses. Since the gravitational force of the Earth on the small ball could be measured directly by weighing it, the ratio of the two forces allowed the density of the earth to be calculated, using Newton's law of gravitation.

S.CHANDRASEKHAR (1910-1995)



- BORN : OCTOBER 10, 1910, MADRAS
- CONTRIBUTION :
 - ▶ STUDIED IN ASTROPHYSICS
 - ▶ CHANDRASEKHAR LIMIT
 - ▶ THEORY OF BROWNIAN MOTION
- AWARDS :
 - ROYAL MEDAL (1962)
 - NOBEL PRIZE IN PHYSICS (1983)
 - COPLEY MEDAL (1984)
- DEATH : AUGUST 21, 1995

MONOGRAPH

Chandrasekhar is known for a distinctive pattern of research that encompassed diverse areas, each of which occupied a period of five to ten years. Each period of study resulted in a series of long papers and ended with a monograph. Speaking of his monographs and his motivation for research, Chandrasekhar, in the autographical account published with his Nobel lecture, said:

After the early preparatory years, my scientific work has followed a certain pattern motivated, principally, by a quest after perspectives. In practice, this quest has consisted in my choosing (after some trials and tribulations) a certain area which appears amenable to cultivation and compatible with my taste, abilities, and temperament. And when after some years of study, I feel that I have accumulated a sufficient body of knowledge and achieved a view of my own, I have the urge to present my point of view, *ab initio*, in a coherent account with order, form, and structure.

Thus Chandrasekhar's researches, principally motivated by a quest after perspectives, a quest after attaining a complete understanding of an area and internalizing it, covered a wide range of investigations that are summarized here chronologically.

EVANGELISTA TORRICELLI (1608-1647)



- BORN : OCTOBER 15, 1608 ,ITALY
- FATHER OF HYDRODYNAMICS
- CONTRIBUTION :
 - ▶ INVENTED MERCURY BAROMETER
 - ▶ FIRST SCIENTIFIC DESCRIPTION OF CAUSE OF WIND
- DEATH : OCTOBER 25, 1647, ITALY

WATER DID NOT RISE...

According to this story, Grand Duke Tuscany got a well dug in the courtyard of his place. This surface of water was about 14 feet below the courtyard level. In order to bring the water up to ground level, a hand- pump was installed with its pipe dipping in the well water. The pump handle was operated repeatedly, but the water did not rise in the pipe more than the height of 33 feet.

Initially it was thought that there was some defect in the pump. But on careful examination the pump was found to be in quite order. This incident was reported to the Duke but he also could not understand why the pump was unable to bring water to the ground level. In these days Galileo to the Grand Duke. So the problem was referred to him. Galileo at that time was old and practically blind, so he asked his disciple Torricelli to look in to it.

Torricelli was aware that a heavier liquid cannot be raised to the same height as lighter liquid. He

selected mercury for his experiment which is more than 13 and half times heavier than water. He calculated that if the measure of 33 feet is divided by 13.5, the equivalent height to which mercury might rise would be about 30 inches. Therefore, the use of mercury, he thought, would reduce the length of the experimental glass tube to only one yard.

To carry out the experiment, Torricelli took a glass tube of about one yard length with its one end closed. He filled it with mercury, closed the open end with his thumb and immersed it in a dish full of mercury so that the open end remained dipped in mercury. When he his thumb from the open end below the mercury level, the mercury in the tube came down slightly and stood at a column length of about 30 inches. The upper part of the tube became empty. This empty column was named as ‘Torricelli’s vacuum’. This experiment proved that water by hand-pump cannot be lifted to more than the height **30 inches x 13.5** , that is, about 33 feet and the apparatus used in this experiment later became the basis of evolving the Barometer

A P J ABDUL KALAM (1931-2015)



- BORN : OCTOBER 15, 1931, TAMILNADU
- FATHER OF INDIAN MISSILE TECHNOLOGY
- 2002 JULY, 25 HE TOOK OFFICE AS 12TH PRESIDENT OF INDIA
- CONTRIBUTIONS :
 - ▶ TO DEVELOP INDIA'S FIRST INDIGENEOUS SATELLITE
 - ▶ LAUNCH VEHICLE (S L V – 111)
 - ▶ RESPONSIBLE FOR DEVELOPMENT, OPERATIONALISATION OF AGNI AND PRITHVI MISSILE
- AWARDS :
 - PATHMABHUSHAN (1981)
 - PATHMAVIBHUSHAN (1990)
 - BHARATH RATNA (1997)
- DEATH : 27 JULY 2015

LAUNCHING WORK OF S L V

There was an incident in Kalam's life which affected him very effectively. His first experiment was related to the launching work of S L V. Unfortunately it was a failure. He was the leader for that work. But his senior scientist Satish Dawan took all the blame for that failure and encourages Kalam for his next work. Because of Dawan's constant support and encouragement- he could succeed in this following experiment. So from that first failure he learned how to win over the failure. And he understood how a leader should be.

ALFRED NOBEL(1833-1896)



- BORN : OCTOBER 21, 1833 , SWEDN
- INTRODUCED NOBEL PRIZE
- CONTRIBUTION : INVENTED DYNAMITE
- DEATH : DECEMBER 10, 1896, ITALI

CREATION OF THE NOBEL PRIZE

The creation of the Nobel Prize came about through a chance event. When Nobel's brother died a newspaper ran a long obituary of Alfred Nobel, believing that it was he who had passed away. Then Nobel had an opportunity granted few people; to read obituary while alive. What he read horrified him. The newspaper described him as a man who had made it possible to kill more people more quickly than anyone else who had ever lived newspaper title was like this "The merchant of Death is dead".

At that moment Nobel realized two things, that this was how he was going to be remembered shortly thereafter, he established the awards. Shakespeare's mark Antony was wrong. The good we do lives after us. For most of as it is the most important thing that we leave behind.

Thinking about how one's obituary is going to read can motivate one to rethink how he is currently spending his life.

SIR JAMES CHADWICK (1891-1974)



- BORN : OCTOBER 26, 1891, ENGLAND
- CONTRIBUTIONS : ► DISCOVERED NEUTRON
► DEVELOPMENT OF ATOMIC THEORY
- AWARDS : ● NOBEL PRIZE IN PHYSICS
● COPLEY MEDAL
● FRANKIL MEDAL
● FARADY MEDAL
- DEATH : JULY 24, 1974

UNKNOWN RADIATION

In 1932 Chadwick observed that beryllium, when exposed to bombardment by alpha particles, released an unknown radiation that in turn ejected proton from the nuclei of various substances. Chadwick interpreted this radiation as being composed of particles of mass approximately equal to that of the proton, but without electrical charge –neutrons.

This discovery provided a new tool for including atomic disintegration, since neutrons, being electrically uncharged, could penetrate undeflected into the atomic nucleus. Chadwick was knighted in 1945.

NOVEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7 C.V.RAMAN, MARIE CURIE
8 EDMUND HALLEY	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29 JOHN AMBROSE FLEMMING	30					

MARIE CURIE (1867-1934)



- BORN : NOVEMBER 7, 1867, WARSAW
- CONTRIBUTIOS : DISCOVERED RADIUM, POLONIUM
- AWARD : NOBEL PRIZE IN PHYSICS (1903)
 - DAVY MEDAL (1903)
 - MATTEUCCI MEDAL (1904)
 - ELLIOTT MEDAL (1909)
 - ALBERT MEDAL (1910)
 - NOBEL PRIZE IN CHEMISTRY (1911)
 - WILLARD GIBBS AWARD (1921)
- DEATH : JULY 4, 1934, PASSY

RADIO ACTIVITY

- ❖ Marie curie started her carrier as the co-helper of Professor Becquerel, the discoverer of radio activity. Becquerel had left some pieces of uranium in the drawer of his table a few years earlier. One day, Marie took out these pieces and used them to weigh photo-plates. When these photo-plates were developed, she saw a strange jumble of lines on these. Marie became suspicious that some rays had emanated from the uranium which affected the photo-plates.

- ❖ In order to solve the mystery behind this incident, Marie resigned from the assistantship of Professor Becquerel. One night Marie and her husband studied the map of Europe, and discovered that in the small country Bohemia of uranium pitchblende was found in plenty. The curie couple requested the government Bohemia to donate 10000 kg of pitchblende free of cost.

C.V RAMAN (1888-1970)



- BORN : NOVEMBER 7, 1888, MADRAS
- PRESIDENT OF THE 16th SESSION OF THE INDIAN SCIENCE CONGRESS IN 1929
- CONTRIBUTIONS : ▶ RAMAN EFFECT
 - ▶ 1932, RAMAN AND SURI
 - BHAGAVAUTAM DISCOVERED
 - THE QUANTUM PHOTON SPIN
 - ▶ THEORY OF TRANSVERSE
 - VIBRATION
- AWARDS : NOBEL PRIZE IN PHYSICS, 1930
- DEATH : 1970, BANGLORE

RAMAN EFFECT

Sir C.V. Raman, who was awarded the Nobel Prize for physics in 1930, went to Stockholm to receive the prize. He demonstrated 'Raman effect' before the assembled scientists. He chose alcohol as his medium.

a function was organized in the evening to facilitate Raman. Many toasts were proposed in honour of the distinguished scientists. Raman took only tea and had not taken liquor in his life. One of the scientists present in the function jovially said:

“Sir in the morning you entertained us by demonstrating Raman Effect on alcohol. Why don't you provide us further entertainment by demonstrating the effect of alcohol on Raman”.

EDMUND HALLEY (1656-1742)



- BORN : NOVEMBER 8, 1656, ENGLAND
- THE COMET HUNTER
- CONTRIBUTIONS :
 - ▶ HALLEY'S COMET
 - ▶ ASTRONOMY
 - ▶ GEOPHYSICS
 - ▶ CARTOGRAPHY
 - ▶ DISCOVERY OF STELLAR MOTION
- DEATH : JANUARY 14, 1742, ENGLAND

HALLEY'S COMETS

Halley's calculation of the periodic nature of comets was his most significant contribution to astronomy. The difficulty in determining their motion arose, because a comet could be seen for only a short time and it was only possible to fit a series of curves through observed positions. By the mid-seventeenth century, it was generally accepted that the orbital path must be an ellipse, a parabola, or a hyperbola. Newton preferred the parabola, but Halley, decided to consider the possibility of an ellipse.

JOHN AMBROSE FLEMING (1849-1945)



- BORN : NOVEMBER 29, 1849,
ENGLAND
- FATHER OF MODERN ELECTRONICS
- CONTRIBUTION : VACCUM TUBE
- AWARDS : ● FELLOW OF THE ROYAL
SOCIETY
● FARADAY MEDAL
● ALBERT MEDAL
- DEATH : APRIL 18, 1945, INGLAND

RECEIVE A MESSAGE

One night, Fleming gave a lecture at the Royal society, during which he would receive a message in Morse code on his wireless set. The message was to come from a remote island, just at the end of a lecture on radio technology. Fleming got up and gave the lecture calm and confident. The technician behind him saw the message. It typed out in code, a number of limericks about a “young fellow from Italy”. As the lecture went on, the area behind Fleming received more and more insulting messages. Someone had hijacked the radio. The signals stopped just before the end of the lecture and his real message came in. Fleming hearing about the incident later, left hugely insulted. And he sends an open letter to Maskelyne. Then Maskelyne pointed out that if what Fleming had claimed about radio’s confidentiality was true, there would have been no way to interfere with the radio signal. Fleming had disproved his own claims.

DECEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14 NATIONAL ENERGY CONSERVATION DAY	15	16	17	18 J J THOMSON	19
20	21	22	23	24	25	26
27	28	29	30	31		

J. J THOMSON (1856-1940)



- BORN : DECEMBER 18, 1856, BRITAIN
- CONTRIBUTION : ESTIMATE THE CHARGE OF ELECTRON
- AWARD : NOBEL PRIZE IN PHYSICS (1906)
- DEATH : AUGUST 30, 1940

OUTSTANDING TEACHER

J. J Thomson was an outstanding teacher and, when in good form, and unsurpassable lecturer. He knew the art of holding the attention of the audience, presuming neither too much nor too little on the part of the student. He gave regular lectures to the junior classes in the morning and to post-graduate classes in the afternoon. He never asked students set on a research carrier to begin by reading about work already done, lest their own views were influenced by assumptions that might be difficult to Throw off later. He advised them to re-examine basic ideas for which he considered teaching to be helpful.

BRAINY MYTHOS

COLLECTION OF ANECDOTES OF FAMOUS SCIENTISTS

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