

365

奇趣英语乐园

16

Inventions and Discoveries

了不起的发明和发现

〔印〕爱思得图书国际企业
Xact Studio International 编绘



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了不起的发明和发现

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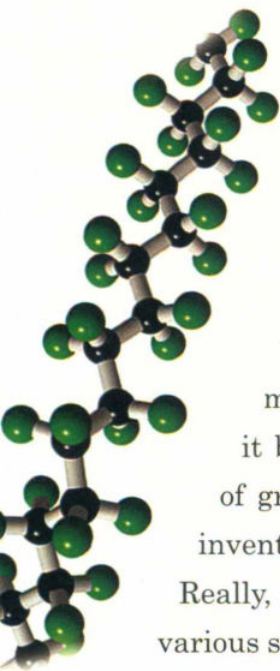
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INTRODUCTION

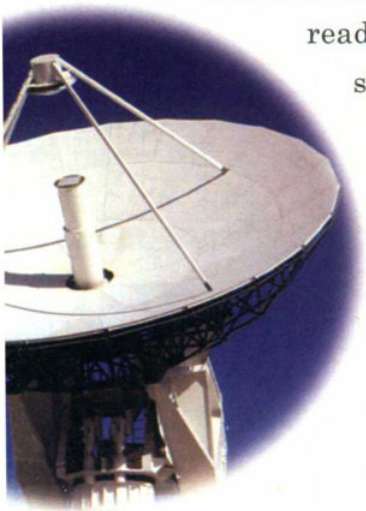


The present age is an era of great marvels. We are scientifically so advanced and developed that the whole world seems to be a global village. Different types of inventions and discoveries have made almost everything possible. The Hubble can capacitate human beings to see the beginning of the time itself. In the modern era, we can pinpoint our location through satellite navigation systems and may have volumes of encyclopedias on a microchip. How did it become possible? It became possible due to the contributions of great scientists and discoverers who sacrificed all their life in inventing and discovering different things for the sake of humanity.

Really, the inventions and discoveries, outcomes of untiring efforts of various scientists and discoverers, have made life easy and comfortable.

Some of the inventions have become a part and parcel of our daily lives and without them, we can't think of a civilized life. In this book of ours, *365 Inventions and Discoveries*, we have made a sincere effort to share some of the important inventions and discoveries with our readers. The highly illustrative and informative presentation of the book will not only enhance

readers' knowledge, but also motivate them to create something noble and necessary. The book contains vital information on 365 distinct inventions and discoveries to complete the readers' journey through different useful inventions and discoveries in just one year. We earnestly hope that the book will prove very useful for our readers. Constructive suggestions from our curious readers are gratefully acknowledged.



CONTENTS

JANUARY

Air Conditioner / 2
Adrenaline / 3
Aerosol / 3
Braille / 4
Boyle's Law / 4
Barometer / 5
Aluminum Manufacture / 5
Bacteria are Single Cells / 6
Calculus / 6
Band-aid / 7
Chocolate Chip Cookies / 7
Coca-Cola / 8
Diaper / 8
Electric Chair / 9
Electromagnet Device / 9
Elevator / 10
Electric Iron / 10
Electric Cars / 11
Fuel Cell / 11
Green Plastic Garbage Bag / 12
Phonograph / 12
Glass / 13
Globe / 13
Hallmark Cards / 14
Laptop / 14
Liquid Crystal Display / 15
Match Stick / 15
Electron Microscope / 16
Motorcycle / 17
Printing Press / 17
Pendulum Clock / 18

FEBRUARY

Air Brakes / 20
Polaroid Camera / 20
Paper Clip / 21
Paper Puncher / 21
Piano / 22
Polio Vaccine / 22
Positron / 23
Penicillin / 23
Richter Scale / 24
Rocket / 24
Rollfilm / 25
Rubber Band / 25
Refrigeration / 26
Radar / 26
Steam Engine / 27
Scotch tape / 27
Sewing Machine / 28
Syringe Needle / 28
Supercomputer / 29
Toothbrushes / 29
Television / 30
Telegraph / 30
Transistor / 31
Toilet Paper / 31
Telescope / 32
Three-way Traffic Signal / 32
Superglue / 33
Toothpaste / 34

MARCH

Anesthetic / 36
Antiseptic / 36
Antitoxin / 37
Aspirin / 37
Atoms / 38
Avogadro's Law / 38
Hot Air Balloon / 39
Barbed Wire / 39
Mars Canals / 40
Cement / 40
Cholera / 41
Combustion / 41
Concrete / 42
Concentrated Milk / 42
Conditioned Reflex / 43
Conservation of Electric Charge / 43
Contagion Theory / 44
Bessemer Converter / 44
Cosmic String Theory / 45
Cotton Gin / 45
Cyclotron / 46
Deuterium / 46
Dye Mauve / 47
Dynamite / 47
Law of Gravitation / 48
Evolution Theory / 49
Exclusion Principle / 49
Law of Falling Bodies / 50
Fermentation / 51
Frozen Food / 51
Spectroscope / 52

APRIL

Gyrocompass / 54
Gyroscope / 54
Halley's Comet / 55
Heart Implantation in Human / 55
Helicopter / 56
Helium was First Observed on Sun / 56
Digital Video System / 57
Electrical Induction / 57
Insulin / 58
Intelligence Quotient / 58
Interferons / 59
Isotope of Hydrogen Has No Neutron / 59
Jet Propulsion / 60
The Stimulated Emission / 60
Lawn Mover / 61
Lens (Bifocal) / 61
Leyden Jar / 62
Lightning Rod / 62
Locomotive / 63
Cylinder Lock / 63
Earth's Magnetic Field / 64
Measles / 64
Metric System / 65
Microphone / 65
Microwave / 66
Motion Pictures / 66
Moving Car / 67
Neptune / 67
Neptunium / 68
Neutron / 68

MAY

Machine-gun / 70
Nitroglycerin / 71
Nuclear Reactor / 71
Oil Well / 72
Ozone / 72
Pacemaker / 73
Parachute / 73
Periodic Table / 74
Photovoltaic Effect / 74
Plate Tectonics / 75
Airships / 75
Gene Transfer / 76
Holograph / 77
Pressure Cooker / 77
Rabies Immunization / 78
Radio / 78
Revolver / 79
Rotation of Earth / 79
Safety Pin / 80
Seismograph / 80
Stethoscope Detects Sound / 81
Telephone / 81
Thermometer / 82
Tractor / 82
Tuberculosis Bacterium / 83
Typewriter / 83
Uranus / 84
Xerography / 84
Zippe / 85
Bicycle / 85
Nuclear Fission / 86

JUNE

Ballpoint Pen / 88
Altimeter / 88
ATM Conducts Banking Transactions / 89
Barbie Doll Named after a Girl / 89
Basketball / 90
Alternative Current (AC) / 90
Baseball / 91
Bell / 91
BASIC Computer Language / 92
Bulldozers / 92
Cellophane / 93
Champagne / 93
Chapstick / 94
Cheese Slicer / 94
Electric Christmas Lights / 95
Cigarette / 95
Clarinet / 96
Coat Hanger / 96
Comics / 97
Compact Disc / 97
Computer Game / 98
Computer Keyboard / 98
Printer / 99
Contact Lenses / 99
Cordite / 100
Corkscrews / 100
Cortisone / 101
Crayons / 101
Credit Card / 102
Crossword Puzzle / 102

JULY

Dialysis Machine / 104
Diabetes Testing Kits / 105
Diesel Engine / 105
Dishwasher / 106
Disposable Cell Phone / 106
Diving Regulator / 107
Geodesic Dome / 107
Donut or Doughnut / 108
DRAM (Dynamic Random Access Memory) / 109
Drinking Straws / 109
Football or Hacky Sack / 110
Dr. Pepper, a Soft Drink / 110
Fax Machine / 111
Earmuffs / 111
Earplugs / 112
Easel / 112
Dry Cell / 113
Masticator Machine / 113
E-mail / 114
Erector Set / 114
Fingerprints / 115
Automatic Sprinkler System / 115
Fig Newton / 116
Electric Guitar / 116
Fly Swatter Kills Flies / 117
Flying Shuttle / 117
Electron Microscope / 118
Electroplating / 118
Electroscope / 119
Escalators / 119
Ferris Wheel / 120

AUGUST

Floppy Disc / 122
Forensic Science / 123
Linoleum / 123
Freon / 124
Gatling Gun / 124
Geobond / 125
Gerber Variable Scale / 125
Grenade / 126
Gramophone / 126
Macintosh Raincoat / 127
Guillotine / 127
Magic Lanterns / 128
Magnetic Resonance Imaging (MRI) / 128
Metal Detector / 129
Hovercraft / 129
HTML / 130
Hydrofoil Boats / 130
Hygrometers Measure the Humidity / 131
Hyperbaric Oxygen Chambers / 131
Skates / 132
Iconoscope / 132
Halogen Lights / 133
I-Pod / 133
Iron Lung / 134
Jacuzzi / 134
Java Script / 135
Jet Aircraft / 136
Jigsaw Puzzle / 136
Letter Box / 137
Lie Detector / 137
Ethernet / 138

SEPTEMBER

Fountain Pen / 140
Induction Coil / 140
Sailboards for Sailing and Surfing / 141
Kaleidoscope Kreator / 141
Kevlar / 142
Saxophone / 142
Optical Disk / 143
Lava Lamp / 143
La-Z-Boy Recliner / 144
Liposuction / 144
Loudspeaker / 145
Mail Order Catalog / 145
HDPE (High Density Polyethylene) / 146
Newspaper / 146
Microsoft Windows / 147
Mousetrap / 147
MP3 / 148
Nintendo / 148
Nipkow Disk / 149
Nystatin / 149
Ocarina / 150
Optical Analysis System / 150
Orgone Accumulator / 151
O-Ring / 151
Petroleum Refinery / 152
Periscope / 152
Phototypesetter / 153
Play-Doh / 153
Polyester / 154
Popsicle / 154

OCTOBER

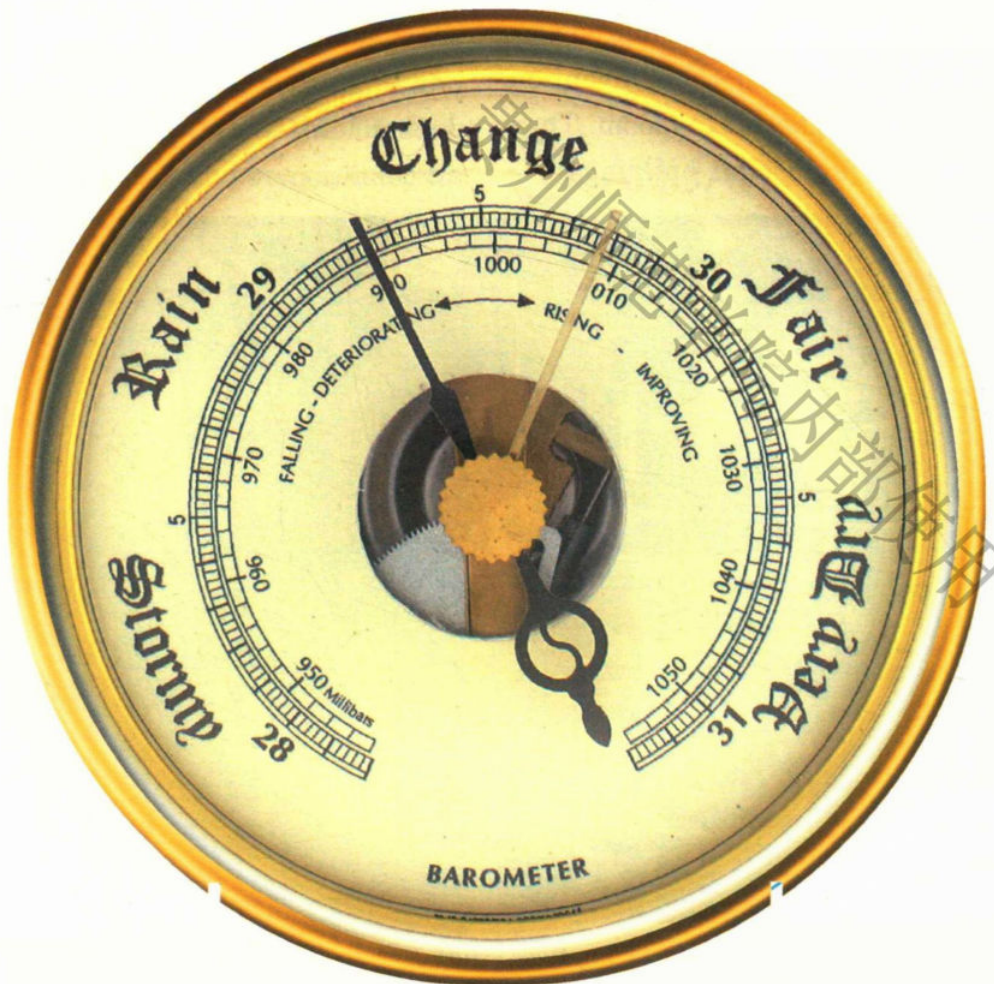
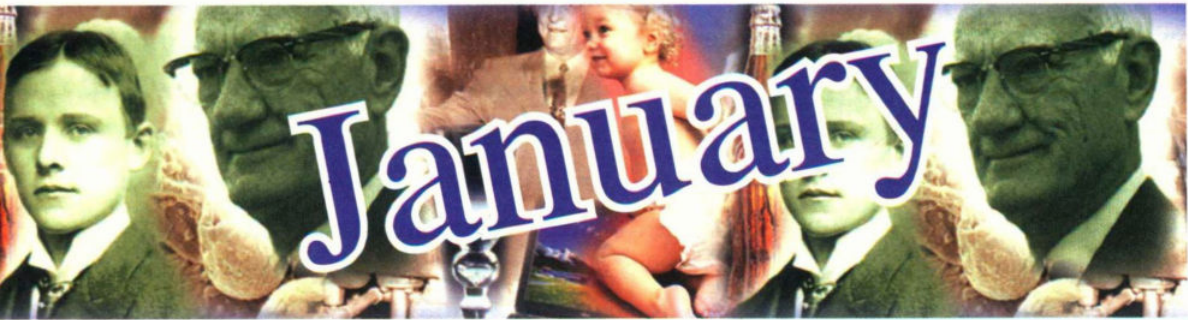
Ignition System / 156
Prosthetics / 156
PVC (Vinyl) / 157
Rolodex / 157
Root Beer / 158
Pullman Sleeping Car / 159
Scotchgard / 159
Sea-cretion / 160
Seaplane / 160
Antipersonnel Projectile / 161
Silly Putty / 162
Slot Machine / 162
High Quality Steel / 163
Smart Pill / 163
Snow Blower / 164
Solar Cell / 164
Sonar / 165
Spacesuit / 165
Stereotype Printing / 166
Tampons / 166
Tattoo Machines / 167
Teddy Bear / 167
Bakelite / 168
Dewar Flask / 168
Polytetrafluoroethylene / 169
Spark Plug / 169
Pocket-watches / 170
Superconductor / 170
Tetris / 171
Touch Sensors / 171
Transistor / 172

NOVEMBER

FORTRAN / 174
Trivial Pursuit / 174
Magnifying Glass / 175
Seed-drills / 175
Vacuum Cleaner / 176
Diving Bell / 176
Vending Machines / 177
Submarine / 177
Water Fountain / 178
Water Heater / 178
Anemometer / 179
Wheelchair / 179
Water Frame / 180
Windshield Wipers / 180
Powerloom / 181
Wristies / 181
Yellow pages / 182
Zeppelin / 182
Exoskeleton Device / 183
Microprocessor / 183
Shorthand / 184
Wireless Telephone / 184
Tabulating Machine / 185
Spectrograph / 185
Spinning Mule / 186
Extruded Polystyrene Foam / 186
Gliders / 187
Rayon / 187
Tea Bags / 188
Turbojet Engine / 188

DECEMBER

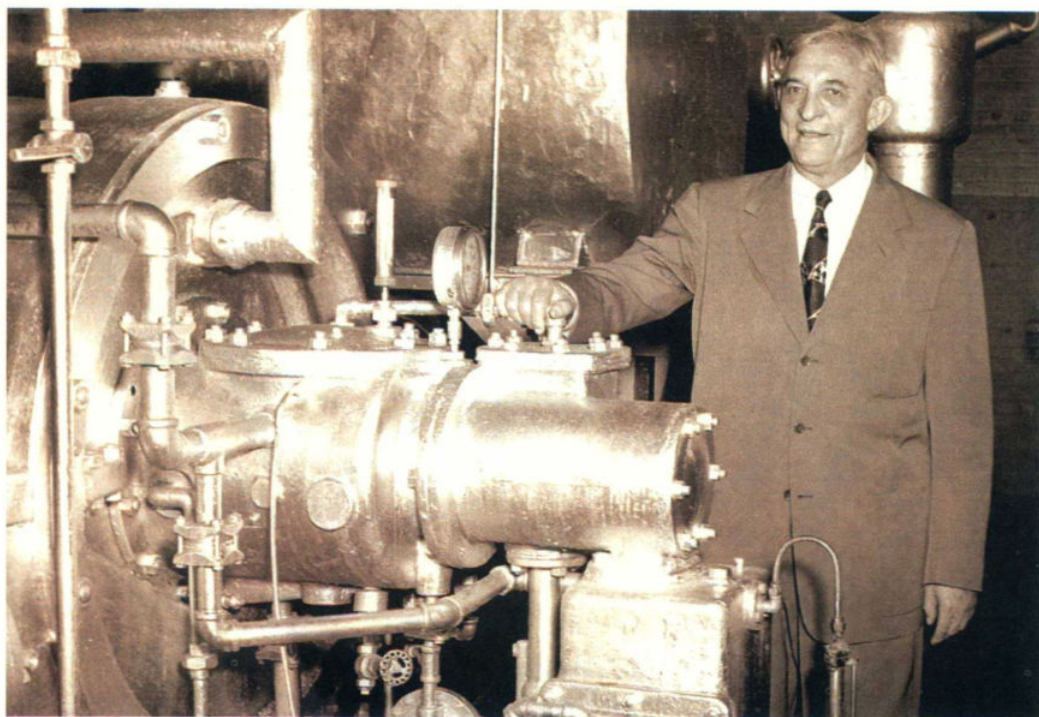
French Horn / 190
Thresher / 190
Baby Carriage / 191
Polythene / 191
Plough / 192
Polymer Gels / 192
Sugar Processing Evaporator / 193
Telephone Switching System / 193
Tennis / 194
Vacuum Packed Canning / 194
Ambulance / 195
Cricket / 195
Dental Floss / 196
Blue Jeans & Denim Fabric / 196
Gummi Candy / 197
Hacky Sack History / 197
VisiCalc / 198
Hydraulic Jack / 198
Saw / 199
Neon lamp / 199
Oral Contraceptive / 200
Ultrasound / 200
Pez Candy / 201
Frequency Modulation / 201
Pizza / 202
Antibiotics / 203
Ketchup / 203
Chuckwagon / 204
Sonoprep / 204
Safety Razor / 205
Black Box / 205



Air Conditioner

Willis Carrier, an American engineer, was the first to make a close ancestor to the modern air conditioner units. The machine, at that time was called "Apparatus for Treating Air". It was built for the Sackett-Wilhelms Lithographing and Publishing Co. in Brooklyn, New York. Chilled coils were used in the machine to cool air and lower humidity to 55%, although the apparatus made with enough precision which the humidity level required was adjustable. Just after their invention air conditioners began to bloom. They first hit the industrial buildings—

printing plants, pharmaceutical manufacturers, textile mills and hospitals. In due course, their presence in homes was approved too. The first air-conditioned home was that of Charles Gates, son of gambler John "Bet a Million" Gates, in Minneapolis in 1914. However, during the first wave of their installation, air conditioner units were large, expensive, and dangerous due to the toxic ammonia used as a coolant. In 1922, the ammonia was replaced with the benign coolant dielene and a central compressor was added to reduce the size of the unit. Within a short span of time almost every office building, institution, railroad car and department store was outfitted with air conditioners.



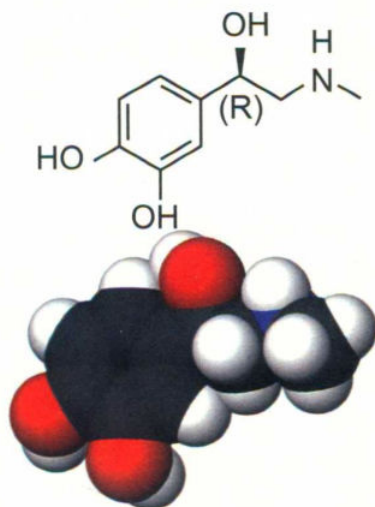
Willis Carrier

2 JANUARY

Adrenaline

Adrenaline is a Catecholamine. It is related to the family of biogenic amines. It forms colourless to white crystalline solids. It is sensitive to light and air, and forms dark products during the process of decomposition. L-Adrenaline has some important biological functions. It belongs, like the chemically related noradrenaline, to the family of adrenal medulla hormones. The storage and mobilization of glycogen and fatty acids are much influenced by this hormone. It also influences corresponding metabolic path. The hormone has a big influence on the stor-

age and mobilization of glycogen and fatty acids and the corresponding metabolic pathways.



(R)-(-)-L-Epinephrine or (R)-(-)-L-Adrenaline

Aerosol



3 JANUARY

A gaseous suspension of fine liquid or solid particles may be said as an aerosol. The concept of aerosol cans came into existence with the introductions of self-pressurized carbonated beverages in France as early as 1790. In 1837, Perpigna invented a soda siphon incorporating a valve. Metal spray cans were being tested as early as 1862. They were constructed from heavy steel and were much too bulky to be commercially successful. In 1899, inventors Helbling and Pertsch patented aerosols pressurized using methyl and ethyl chloride.

4 JANUARY

Braille

The Braille is a system which is used by blind people to read and write. This system was devised by Louis Braille of France in year 1800. Each character of Braille, also called a cell, is composed of six dots. The dots are arranged in a rectangle which has two columns each with three dots. The Braille system was developed on the basis of a communication method which was introduced by Charles Barbier in response to the demand of Napoleon for code which could be used by his soldiers to communicate secretly. The Braille

Institute was founded in 1919 as the Universal Braille Press to provide services to the blind.



Boyle's Law



Robert Boyle

5 JANUARY

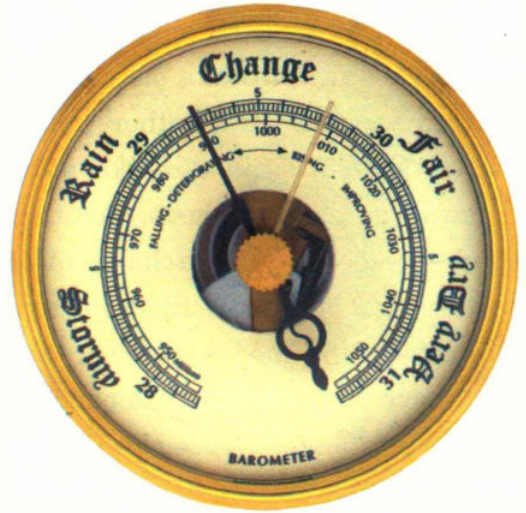
The earth's atmosphere is composed of several gases and other components. Gases exhibit certain properties including pressure, temperature, volume and mass. Careful, scientific observations have determined that these are related to one another. In the mid-1600s, Robert Boyle stated his law regarding the properties of gases. Boyle's law describes the inversely proportional relationship between the pressure and volume of a gas, if the temperature is kept constant within a closed system.

6 JANUARY

Barometer

The barometer is a device which is used to measure air pressure. In the early 17th century, many Italian scientists were working on the principal of a vacuum and air pressure. However, it was a young scientist by the name of Evangelista Torricelli who first detailed his experiments with barometer. Nowadays mercury barometers are in use. A standard mercury barometer consists of a glass tube about 76 cm in height. The tube is closed at one end. It is filled with mercury, and inverted

with the open end immersed in a cistern of mercury. With the cistern surface exposed to atmospheric pressure, the height of the mercury column varies with that pressure.



Aluminum Manufacture



Charles Martin Hall

7 JANUARY

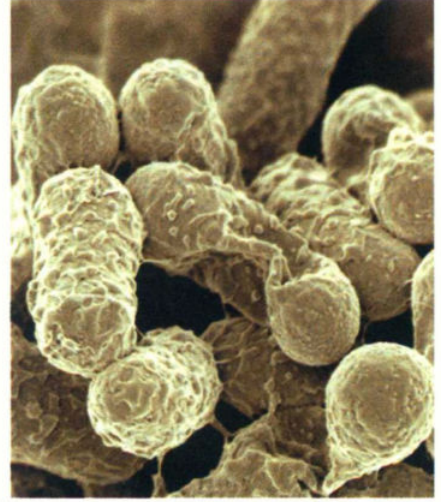
The process to manufacture pure aluminium was devised by Charles Martin Hall in 1885. Aluminum is the most abundant metal in the earth's crust. It is never found in free state in nature. All of the earth's aluminum has combined with other elements to form compounds. Two of the most common compounds are alum, such as potassium aluminum sulfate and aluminum oxide. About 8.2% of the earth's crust is composed of aluminum.

8 JANUARY

Bacteria are Single Cells

Bacteria form a very large group of unicellular microorganisms. They cannot be seen with the naked eye. Their single cells have neither a membrane-bounded nucleus nor other membrane-bounded organelles like mitochondria and chloroplasts. Another group of microbes, the archaea, meet these criteria but are so different from the bacteria in other ways that they must have had a long, independent evolutionary history since close to the

dawn of life. Bacteria were formerly regarded as plants and constituted the class Schizomycetes. However, they are now classified as prokaryotes.

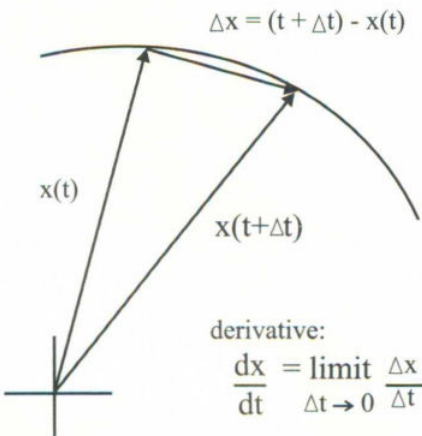


Calculus

Issac Newton and Gottfried Leibniz are credited with discovery of calculus. They independently unearthed its foundations. Calculus is the branch of unearthed Mathematics which deals with the study of limits, derivatives, integrals and infinite series. Although

9 JANUARY

they both were instrumental in its creation, they thought of the fundamental concepts in very different ways. On one side Newton considered variables changing with time. On the other side Leibniz thought of the variables as ranging over sequences of infinitely close values. He introduced dx and dy as differences between successive values of these sequences. Leibniz knew that dy/dx gives the tangent. However, he did not use it as a defining property. On the other hand, Newton used quantities x' and y' , which were finite velocities, to compute the tangent.

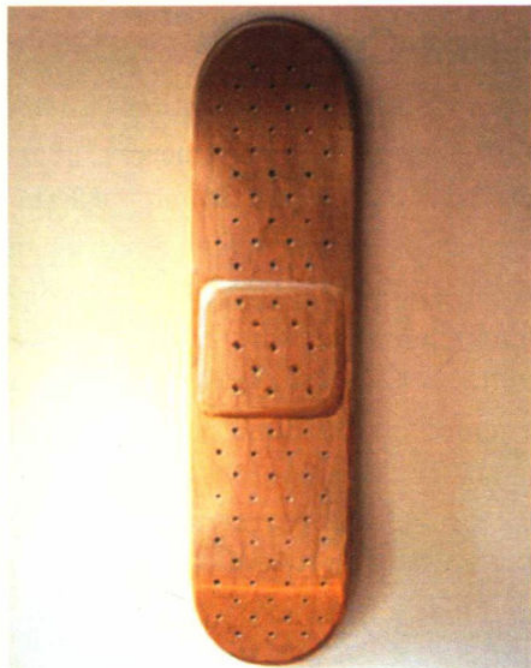


10 JANUARY

Band-aid

Band-aid is the trademark name for bandages manufactured by Johnson & Johnson company. It was invented by Earle Dickson in 1920. He was an employee at Johnson Company. He developed the bandage for his wife Josephine, who frequently cut and burned herself while cooking. The prototype product allowed his wife to dress her wounds without assistance. Such bandages are better known as an 'Adhesive Plaster', 'Sticking Plaster' or sim-

ply 'Plaster'. The first bandages were produced by hand.



Chocolate Chip Cookies



11 JANUARY

It was Ruth Wakefield who is credited with the invention of Chocolate Chip Cookies. Legend tells us that Ruth Wakefield invented chocolate chip cookies by mistake. She was a dietitian and lectured on food. Ruth Wakefield prepared the recipes for the meals served to the guests at the Inn and gained local notoriety for her desserts. One of her favorite recipes was for Butter Drop Do cookies. The recipe called for the use of baker's chocolate and one day Ruth substituted a semi-sweet chocolate bar cut up into bits.