

The *lanthan*

मंथन

वर्ष 4 अंक 1

15 अगस्त, 2009



स्टाफ क्लब,
आई. एच. बी. टी. पालमपुर

मंथन

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आमुख

मंथन आपके स्टाफ क्लब की पत्रिका है, इसका ग्यारवां अंक आपके समक्ष प्रस्तुत है। आपके अन्दर विद्यमान वे प्रतिभायें, जिन्हें आप बोलकर या अन्य किसी रूप में व्यक्त नहीं कर सकते आप उन्हें मंथन के माध्यम से लघु लेख व कथा, कलाकृति, रेखाचित्र, कविता व अन्य किसी भी रूप में व्यक्त कर सकते हैं तथा छिपी प्रतिभा को निखार सकते हैं।

“मंथन की भावना है—भावनाओं का मंथन।”

स्टाफ क्लब के सभी सदस्यों एवं उनके परिजनों से निवेदन है कि वे मंथन के आगामी अंकों के लिए प्रविष्टियां देने की कृपा करें ताकि मंथन का अगला अंक समय से निकाला जा सके। भाषा हिन्दी या अंग्रेजी हो सकती है।

इस अंक में प्रविष्टियां देने वालों व सहयोग प्रदान करने वालों का स्टाफ क्लब सदैव आभारी रहेगा।

संपादक

विषय सूची

• स्वतंत्रता संग्राम की अद्भुत कहानी	1
• स्वाधीनता का सवेरा	3
• कौमी महल	4
• धिक्कार है धिक्कार है	5
• कुछ पंक्तियां कुछ अहसास	6
• मंथन की जरूरत	7
• Swine Flue	8
• Facts about Bombay	10
• Solar Eclipse : Science and Superstition	11
• Paintings	15-24
• Poem : Humans too are evil spirits	25
• Poem : Life	26

स्वतंत्रता संग्राम की अद्भुत कहानी

भारत में ब्रिटिश राज की शुरुआत 1757 में प्लासी के युद्ध के दौरान हुई, जब ब्रिटिश सेना ने बंगाल के नवाब को हराकर ईस्ट इंडिया कंपनी की स्थापना की। धीरे – धीरे कंपनी ने भारत के दूसरे प्रांतों पर भी कब्जा कर लिया और अपने अधिकार बढ़ाने के लिए नित नए अधिनियमों का सृजन किया। ब्रिटिशों द्वारा किये जाने वाले भेदभावपूर्ण व्यवहार का परिणाम 1857 में पहली बार व्यापक रूप से सामने आया। उस समय भारतीय सैनिकों को गाय और सूअर की चर्बी के खोल वाली कारतूस दी जाती थी, जिसे दांतों से ताड़ना होता था। यह हिंदू तथा मुस्लिम दोनों धर्मों में निषेध था। अंततः मार्च 1857 में बैरकपुर की इंफैंटरी के मंगल पांडे ने कारतूस की खोल तोड़ने से इंकार कर दिया तथा अपने ब्रिटिश सार्जन्ट पर हमला कर दिया।

7 अप्रैल को मंगल पांडे को फांसी की सजा दी गई, पर तब तक विद्रोह की आग फैल चुकी थी। पूरे भारत से विद्रोही दल दिल्ली में इकट्ठा हुए एवं उन्होंने लाल किले पर कब्जा करके मुगल बादशाह बहादुर शाह को अपना नेता घोषित कर दिया। हालांकी अंग्रेजों ने कठोरता से विद्रोहियों का दमन किया, मंगल पांडे को अपने साहस के लिए इतिहास में सदैव याद रखा जाएगा। इस युद्ध में तात्यां टोपे, नाना साहब तथा रानी लक्ष्मी बाई जैसे वीरों ने अपने साहस का परिचय दिया।

1857 का युद्ध आधुनिक भारत के परिदृश्य में एक महत्वपूर्ण मोड़ साबित हुआ। ईस्ट इंडिया कंपनी की जगह प्रत्यक्ष ब्रिटिश शासन ने ले ली। रानी विक्टोरिया ने भारतीयों के साथ समान व्यवहार का वादा किया, लेकिन 1857 के विद्रोह के बाद भारतीयों का विश्वास ब्रिटिशों से उठ चुका था। आने वाले दशक बढ़ती राजनितिक जागरूकता और राष्ट्रीय और प्रांतीय स्तर पर भारतीय नेतृत्व के उदय के साक्षी रहे। इस दौरान भारतीय राष्ट्रीय कांग्रेस, आर्य समाज तथा ब्रह्म

समाज जैसे संगठन अस्तित्व में आए। सन् 1900 तक कांग्रेस एक अखिल भारतीय राजनीतिक संगठन के रूप में उभर आई। कांग्रेसी नेता बाल गंगाधर तिलक ने ही पहली बार पूर्ण स्वराज का नारा दिया। महात्मा गांधी के अडिग नेतृत्व में कांग्रेस लाखों भारतीयों को एकजुट करने में सफल रही। गांधी जी ने देश को अहिंसा एवं सत्याग्रह का मार्ग दिखाया, जिस पर हमने आजादी का सफर तया किया। दांडी यात्रा असहयोग आंदोलन, सविनय अवज्ञा आंदोलन तथा भारत छोड़ो जैसे आंदोलन जैसे सत्याग्रहों ने अंग्रेजों की नींद उड़ा दी। 20वीं सदी में क्रांतीकारी सशस्त्र विद्रोह अहिंसावादी सत्याग्रह के पूरक रहे। उल्लेखनीय विद्रोह बंग-विभाजन के दौरान बंगाल में तथा पंजाब जहां इसे विशाल ग्रामीण और सैन्य जनाधार प्राप्त था, में हुए। चंद्राशेखर आजाद ने क्रांतीकारी संगठन हिंदुस्तान सोशलिस्ट रिपब्लिक पार्टी की स्थापना की।

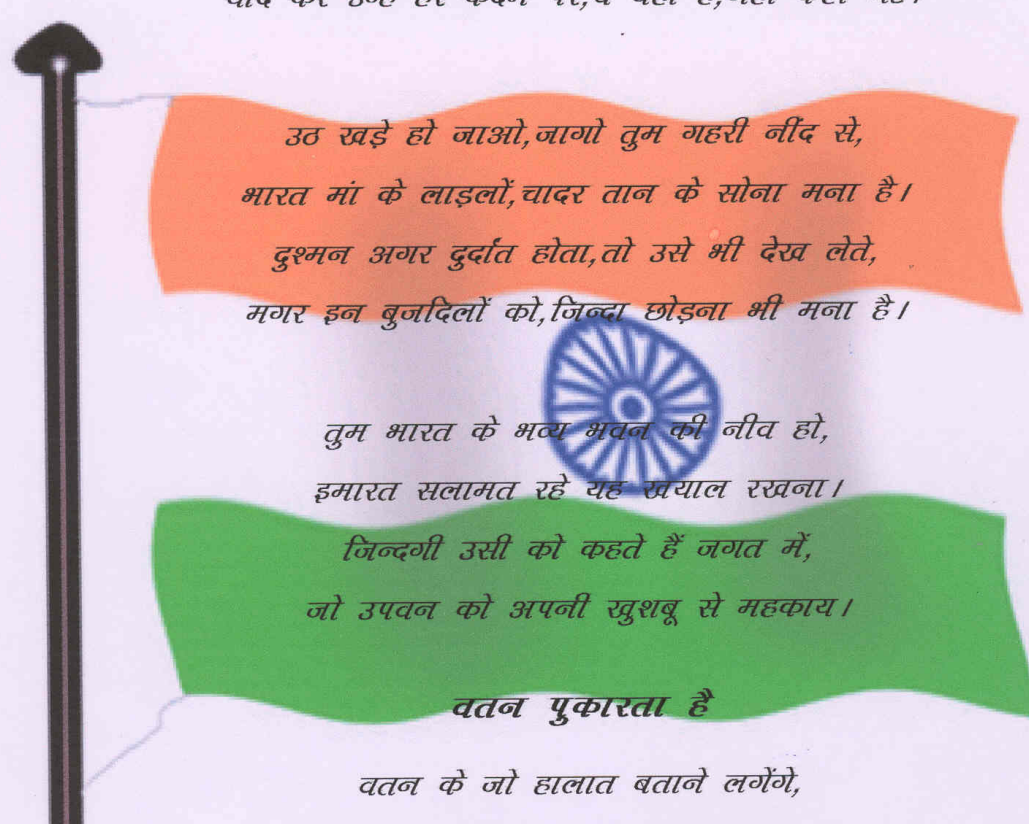
भगत सिंह और साथियों ने 1929 में विधान सभा में बम फेंक कर अपना संदेश लोगों तक पहुंचाया। इसी दौरान नेताजी सुभाषचंद्र बोस ने आजाद हिंद फौज की स्थापना कर भारतीय क्रांतीकारी विद्रोह को एक नया आयाम दिया।

अंततः 15 अगस्त 1947 की आधी रात को भारत को एक स्वतंत्र राष्ट्र घोषित किया गया। जहां हमें अपने स्वतंत्रता सेनानियों पर गर्व है, वहीं हमें उनकी धरोहर अर्थात् अपनी स्वतंत्रता को आने वाले खतरों से भी बचाना है। बढ़ते आतंकवाद, प्रदूषण, भ्रष्टाचार, पुंजीवाद जनसंख्या, पड़ोसी मुल्कों में फैली अशांति, वैश्वीकरण तथा ऐसे कई खतरे हमारे सर पर मंडरा रहे हैं जिनसे हम मुंह नहीं मोड़ सकते। मुझे यकीन है कि हम सब मिलकर इन समस्याओं को पराभूत करके एक भारत का निर्माण करेंगे जो सही मायनों में स्वतंत्र होगा, सभी प्रकार के खतरों से भी ।

अमित बाफना
वैज्ञानिक, जैव-प्रौद्योगिकी विभाग

स्वाधीनता का सवेरा

जो थे हमारे बीच मे, वे चले अचानक कहां गए,
स्वाधीनता के दीप में, सर्वस्व समर्पण कर गए,
वे वीर थे, महावीर थे-सन्मार्ग दिखाकर ही गए,
याद करें उन्हें हर कदम पर, वे यही हैं, नहीं कहीं गए।



उठ खड़े हो जाओ, जागो तुम गहरी नींद से,
भारत मां के लाइलों, चादर तान के सोना मना है।
दुश्मन अगर दुर्दांत होता, तो उसे भी देख लेते,
मगर इन बुजदिलों को, जिन्दा छोड़ना भी मना है।

तुम भारत के भव्य भवन की नींव हो,
इमारत सलामत रहे यह खयाल रखना।
जिन्दगी उसी को कहते हैं जगत में,
जो उपवन को अपनी खुशबू से महकाय।

वतन पुकारता है

वतन के जो हालात बताने लगेंगे,
तो पत्थर भी आंसू बहाने लगेंगे,
न जाने कहां खो गई आदमीयत,
जिसे ढूंढने में जमाने लगेंगे।

Compiled by
Vikas Rana

“कौमी महल”

ऐसा कौमी महल बनाऊं
जिस में अपना शिश झुकाऊं
जैसे गोबिन्द सिंह सुलतान
बड़े भारत की जीते शान

मुझ में गांधी के गुण भर दो
मुझ को वीर ज़वाहर कर दो
जैसे गोबिन्द सिंह सुलतान
बड़े भारत की जीते शान

मुझ में साहस मुझ में शक्ति
मुझ में भक्ति जैसी शक्ति
मुझ में वीर वीरता भर दो
मुझ को शहीद भगत सिंह कर दो
जैसे गोबिन्द सिंह सुलतान
बड़े भारत की जीते शान

दौलत राम
परियोजना सहायक

धिकार है अधिकार है

सदियों से एक परम्परा है इस देश में,
नारी के उत्थान पर।
भारत को सदा अभिमान है,
इतिहास बनाने वाली बालाओं पर।
यह नारी ही है जिसका स्थान,
अश्वमेघ में स्वयं राम को रखना पड़ा,
यह नारी ही है जिस के आत्मबल से
यमराज को प्राण हरण त्यागना पड़ा,
समय बदला, नारी ने हर मोड़ पर पुरुषों से बाजी मारी,
परन्तु आज कोख में पलने वाली मासूम
अपनी जात से ही है हारी।
विज्ञान ने की तरक्की और मशीनें हुई हावी,
पैदा होने से पहले ही, पुत्र मोह में,
नारी भ्रूण हत्या की लालसा जागी।
दोषी यह समाज, यह बेकार की पढ़ाई,
डाक्टरों के वेश में, यह सफेद पोश कसाई है।
जाने किस भ्रम में, ये नारी के दुश्मन बनें
लड़के की चाह में न जाने कितने लोगों के हाथ
मासूमों के खून से सने।
डाक्टर जैसे पढ़े लिखे सब,
इसके लिए जिम्मेदार हैं
पैसों की इनकी भूख के आगे
सब तर्क बेकार हैं।
धिकार है ऐसे सफेद पोश जल्लादों को
चंद नोटों के बदले अपना जमीर बेचने वालों को।
विज्ञान का यह दुरुपयोग,
भावी पीढ़ी के लिए अवश्य ही भारी है,
जो इस विश्व को आगे बढ़ाए,
वह यही भारतीय नारी है।

अनिल सूद

कुछ पंक्तियां कुछ अहसास

1

तुम हो पत्थर
कहते हो कि कठोर हो
क्योंकि—
तुमसे लहर नहीं टकराई
मैं हूँ नदी
जब तुमसे बार-बार टकराऊंगी
तुम्हारी कठोरता
अपने संग बहा ले जाऊंगी।

2

रौंदते हैं, कटते हैं,
मसल देते हैं
तार-तार कर देते हैं
उसके हरित वस्त्र
फिर भी,
घनघोर, अंधेरे वन में
हमें राह दिखाती है
वह नन्ही पगडंडी

3

मेघों की आँखों से
छलकी बूंदें जब,
पलकों में ही अटक गई
पाकर स्नेह-स्पर्श किरणों का
वह सररंगी (इंद्रधनुषी) रंगों में बिखर गई।

अंजली उनियाल

राम और श्याम के बीच गहरी मित्रता थी। समय के साथ दोनों एक दूसरे के शत्रु बन गये। समय बीतता गया और राम सम्पन्नता में सामान्य ही रहा और शाम प्रसिद्धि की सीढ़ियां चढ़ता गया। एक बार राम के पुत्र ने अपने पिता को शाम के माध्यम से कही नौकरी के लिए अनुरोध करने को कहा। राम ने स्पष्ट मना कर दिया। पुत्र पिता को कोसता हुआ शाम के पास नौकरी के लिए चला गया। शाम ने उसका गरम जोशी से स्वागत किया और उसे ऐसी नौकरी दिलवा दी जिसमें काम कुछ नहीं था और दो नम्बर की कमाई काफी थी।

यह देखकर शाम के नौकर ने मालिक से पूछ लिया कि ये आप के दुश्मन का बेटा है फिर आपने इसे इतनी अच्छी नौकरी क्यों दिलवा दी तब शाम ने कहा – मैं चाहता हूँ कि यह एक नम्बर का झूठा, बेईमान, भ्रष्ट, कामचोर बने। इससे बढ़कर मेरे राम से दुश्मनी नहीं निभा सकता।

जरूरत है मंथन की, अवगुणों और गुणों को पहचानने की ।

विनय

जैव-प्रौद्योगिकी विभाग

Swine Flu infection by H1N1 influenza virus

Vipin Hallan, Virology Lab

The media has been full of reports about Swine flu lately. Swine flu is basically influenza caused by orthomyxoviruses, which pass from pigs to humans. Orthomyxoviruses are RNA viruses of Orthomyxoviridae family characterized by two glycoprotein spikes H-hemagglutinin and N-neuraminidase. Family Orthomyxoviridae consists of Influenzavirus A - Influenzavirus B - Influenzavirus C - Isavirus and Thogotovirus. The current swine flu has been identified to be caused by H1N1 (*hemagglutinin* type 1, and *neuraminidase* type 1 influenza virus A). All influenza A viruses contain hemagglutinin and neuraminidase, but the structures of these proteins differ from strain to strain, due to rapid genetic mutation in the viral genome. Of the 16 known serotypes of influenza A haemagglutinin, 6 have been isolated from humans at the molecular level (H1, H2, H3, H5, H7, H9), 3 of these have been involved in past pandemics (H1, H2, H3). New strains appear as a result of the re-assortment of novel haemagglutinins into seasonal human influenza A viruses during rare events of double infection with seasonal and zoonotic strains. H5, from avian H5N1 influenza, has been the major cause for concern in recent years (bird flu). However, the 2009 H1N1 influenza was already encountered in past human infections. The protein sequence divergence of the 2009 zoonotic H1 from human seasonal influenza H1 is around 20–24%. A similar level of divergence is found between the 2009 H1 and European swine flu. By contrast, its divergence from North American swine flu strains is around 1–9%. Given that the divergence between H1 and its nearest serotype neighbor H2 is around 40–46%, the 2009 H1 may be broadly considered as halfway towards a new serotype. The current situation is one of antigenic pseudo-shift. Therefore H1N1 is as a result of mutation of four influenza strains (one endemic in humans, one endemic in birds, and two endemic in pigs).

The genetic change that enables a flu strain to jump from one animal to another including humans is called antigenic shift. An antigenic shift can take place when a bird strain of flu passes on from a duck or another aquatic animal directly to human or via an intermediate host like pig and then to humans.

The virus typically spreads from coughs and sneezes or by touching contaminated surfaces and then touching the nose or mouth. Symptoms, which can last up to a week, are similar to those of seasonal flu, and may include fever, sneezes, sore throat, coughs, headache, and muscle or joint pains. This is a virus that's capable of causing a spectrum of illness that includes severe complications and death (especially in persons with asthma, diabetes, obesity, heart disease, or a weakened immune system). There is also concern if the new virus mutates further, it could become more virulent.

The H1N1 infection during World War I killed thousands worldwide over about a year in 1918 and 1919. It is thought to be one of the most deadly pandemics in human history.

Signs and symptoms:

In humans the symptoms of swine flu are similar to those of influenza which includes: fever, chills, cough, sore throat, body aches, headache and fatigue. Some people have reported diarrhoea and vomiting associated with swine flu. Swine flu may cause a worsening of underlying chronic medical conditions, severe illness (pneumonia and respiratory failure).

In children emergency warning signs that need urgent medical attention include a) Fast breathing or trouble breathing, b) Bluish skin colour, c) Not drinking enough fluids, c) Not waking up or not interacting, d) Being so irritable that the child does not want to be held, e) Flu-like symptoms improve but then return with fever and worse cough, f) Fever with a rash

In adults, emergency warning signs that need urgent medical attention include a) Difficulty breathing or shortness of breath, b) Pain or pressure in the chest or abdomen, c) Sudden dizziness, d) Confusion, e) Severe or persistent vomiting

Investigation

It can be diagnosed with sensitive test like RT-PCR. For RT-PCR Swine Flu Panel diagnostic test, a nasal or nasopharyngeal swab is used to amplify the genetic profile of the virus. A positive test result presumably concludes that the patient is carrying the swine flu but it cannot determine the stage of infection and a negative test result does not conclude that a person does not carry the swine flu virus.

Prevention and precautions:

Some hygiene steps that can help in preventing the spread of germs are a) Try to avoid close contact with sick people, b) Washing your hands often will help protect you from germs, c) Avoid touching your eyes, nose or mouth as the virus can spread this way, d) Avoid being in crowded settings. If you happen to be in crowded places then the time spent should be as short as possible, e) Use of face masks and respirators to some extent help but should be combined with other preventive measures for effective prevention, f) Facemasks should be considered for use by individuals who enter crowded settings in order to protect their nose and mouth from other people's coughs and sneezes. This will also reduce the wearer's possibility of coughing or sneezing on others, g) Respirators should be considered for use by those individuals for whom close contact with an infectious person is unavoidable like people taking care of a sick person, h) If you get sick with influenza, stay home from work or school and limit contact with others to keep from infecting them, i) Cover your nose and mouth with a tissue when you sneeze or cough and throw the tissue in the trash after you use it, j) Cover your mouth with hands while you sneeze or cough if you do not have a tissue. Then, clean your hands and do so every time you cough or sneeze, k) Clothes, eating utensils, and dishes used by the ill person should be thoroughly washed with soap and water before use by other persons, l) If you live in areas where swine influenza cases have been identified and become ill with influenza-like symptoms like fever, body aches, runny nose, sore throat, cough, nausea or vomiting or diarrhoea then you should contact your doctor and m) Drink lot of fluids to flush out toxins from body.

Treatment:

- Antivirals: Oseltamivir (Tamiflu) and Zanamivir- are recommended for the treatment and prevention of the infection with swine flu virus
- If a person gets sick, antiviral drugs, which work best if started within 2 days of getting symptoms, can make the illness milder as well as prevent serious flu complications, and hence, make the patient feel better faster
- These drugs should not be used indiscriminately as viral resistance to them can occur and can also affect other organs

- Severe infections in some patients may require additional supportive measures such as ventilation support and treatment of other infections/complications like pneumonia that can occur in patients with a severe flu infection

Sources:

www.wikipedia.com
 www.healthizen.com
 www.ncbi.nlm.nih.gov

Facts about Bombay (Mumbai)

- Bombay has no bombs and is a harbour not a bay.
- Churchgate has neither a church nor a gate. It is a railway station.
- There is no darkness in Andheri.
- Lalbaag is neither red nor a garden.
- No king ever stayed at Kings Circle.
- Nor did Queen Victoria stay at Victoria Terminus.
- Nor is there any princess at Princess Street.
- Lower Parel is at the same level as Parel.
- There are no marines or sailors at Marine Lines.
- The Mahalaxmi temple is at Haji Ali not at Mahalaxmi.
- There are no pigs traded at Dugar Bazaar.
- Teen Bati is a junction of 3 roads, not three lamps.
- Trams used to terminate at Kings Circle not Dadar.
 * Tram Terminus (Dadar T.T.).
- Breach Candy is not a sweetmeat market, but there is a Hospital.
- Safed Pool has the dirtiest and blackest water.
- You cannot buy coal at Kolsa Street .
- There are no ironsmiths at Lohar Chawl.
- There are no pot makers at Kumbharwada.
- Lokhandwala complex is not an iron and steel market.
- Null Bazaar does not sell taps.
- You will not find ladyfingers at Bhendi Bazaar.
- Kala chowki does not have a black police station.
- Hanging Gardens are not suspended.
- Mirchi Gully does not sell chillies.
- Figs do not grow in Anjirwadi.
- Sitafals do not grow in Sitafalwadi.
- Jackfruits do not grow at Fanaswadi.
- But it is true that you may get fleeced at Chor Bazaar!

Compiled by: Sukhjinder Singh

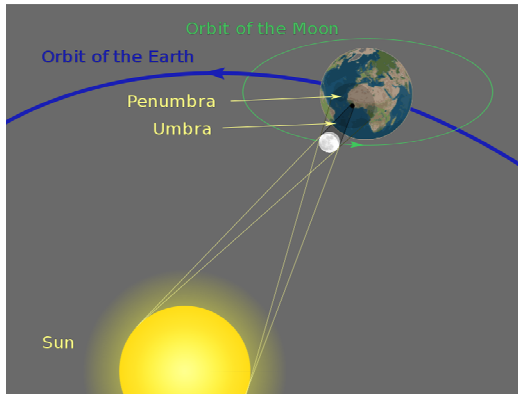
SOLAR ECLIPSE: SCIENCE AND SUPERSTITION

A **solar eclipse** occurs when the [moon](#) passes between the [Sun](#) and the [Earth](#) so that the Sun is fully or partially covered. This can only happen during a [new moon](#), when the Sun and Moon are in [conjunction](#) as seen from the Earth. At least two and up to five solar eclipses can occur each year on [Earth](#), with between zero and two of them being total eclipses.

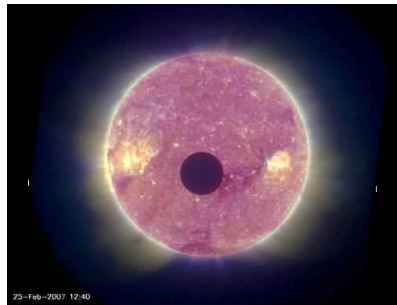
A total solar eclipse is a spectacular [natural phenomenon](#) and many people travel to remote locations to observe one. The recent solar eclipse of January 26, 2009 was an annular eclipse, while the [solar eclipse of July 22, 2009](#) was a total solar eclipse.

In ancient times, and in some cultures today, solar eclipses have been attributed to supernatural causes. Total solar eclipses can be frightening for people who are unaware of their [astronomical](#) explanation, as the Sun seems to disappear in the middle of the day and the sky darkens in a matter of minutes.

Types of solar eclipse: There are four types of solar eclipses. A *total eclipse* occurs when the Sun is completely obscured by the Moon. The intensely bright disk of the Sun



Geometry of a total solar eclipse



The Moon transiting in front of the Sun as seen from [STEREO-B](#) on February, 25 2007 at 4.4 times the distance between the Earth and the Moon

is replaced by the dark silhouette of the Moon, and the much fainter [corona](#) is visible. During any one eclipse, totality is visible only from at most a narrow track on the surface of the Earth.

An *annular eclipse* occurs when the Sun and Moon are exactly in line, but the apparent size of the Moon is smaller than that of the Sun. Hence the Sun appears as a very bright ring, or [annulus](#), surrounding the outline of the Moon.

A *hybrid eclipse* (also called *annular/total eclipse*) transitions between a total and annular eclipse. At some points on the surface of the Earth it is visible as a total eclipse, whereas at others it is annular. Hybrid eclipses are comparatively rare.

A *partial eclipse* occurs when the Sun and Moon are not exactly in line and the Moon only partially obscures the Sun. This phenomenon can usually be seen from a large part of the Earth outside of the track of an annular or total eclipse.

Terminology: *Central eclipse* is often used as a generic term for a total, annular, or hybrid eclipse. The central eclipse is an eclipse during which the central line of the umbra touches the Earth's surface. It is possible, though extremely rare, that part of the umbra intersects with Earth (thus creating an annular or total eclipse), but not its central line. This is then called a non-central total or annular eclipse. The next non-central solar eclipse will be on April 29, 2014. This will be an annular eclipse. The



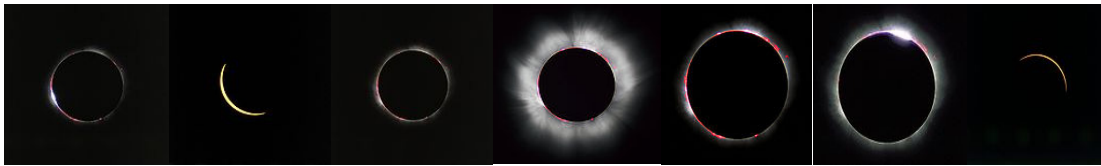
Annular eclipse

next non-central total solar eclipse will be on April 9, 2043.

The phases observed during a total eclipse are called:

- First Contact - when the moon's shadow first becomes visible on the solar disk. Some also name individual phases between First and Second Contact e.g. Pac-Man phase.
- Second Contact - starting with Baily's Beads {cause by light shining through valleys on the moon's surface} and the Diamond Ring. Almost the entire disk is covered.
- Totality - with the shadow of the moon obscuring the entire disk of the sun and only the corona visible
- Third Contact - when the first bright light becomes visible and the shadow is moving away from the sun. Again a Diamond Ring may be observed

Occurrence: Total solar eclipses are rare events. Although they occur somewhere on Earth every 18 months on average, it has been estimated that they recur at any given place only once every 370 years, on average. The total eclipse only lasts for a few minutes at that location, as the Moon's umbra moves eastward at over 1700 km/h. Totality can never last more than 7 min 31 s, and is usually much shorter. The last time this happened was June 30, 1973 (7 min 3 sec). The next eclipse exceeding seven minutes in duration will not occur until June 25, 2150. The longest total solar eclipse during the 8,000-year period from 3000 BC to 5000 AD will occur on July 16, 2186, when totality will last 7 min 29 s. For comparison, the longest eclipse of the 21st century occurred on [July 22, 2009](#) and lasted 6 min 39 sec.



Viewing: Looking directly at the [photosphere](#) of the Sun (the bright disk of the Sun itself), even for just a few seconds, can cause permanent damage to the [retina](#) of the eye, because of the intense visible and invisible radiation that the photosphere emits. This damage can result in permanent impairment of vision, up to and including [blindness](#). The retina has no sensitivity to pain, and the effects of retinal damage may not appear for hours, so there is no warning that injury is occurring.

Partial and annular eclipses: Viewing the Sun during partial and annular eclipses (and during total eclipses outside the brief period of totality) requires special eye protection, or indirect viewing methods. The Sun's disk can be viewed using appropriate filtration to block the harmful part of the Sun's radiation. Sunglasses do not make viewing the sun safe. Only properly designed and certified solar filters should ever be used for direct viewing of the Sun's disk. Especially, self-made filters using common objects like a [floppy disk](#) removed from its case, a [Compact Disc](#), a black colour slide film, etc. must be avoided.



Eclipse glasses

The safest way to view the Sun's disk is by indirect projection. This can be done by projecting an image of the disk onto a white piece of paper or card using a pair of binoculars (with one of the lenses covered), a telescope, or another piece of cardboard with a small hole in it (about 1 mm diameter), often called a [pinhole camera](#). The

projected image of the Sun can then be safely viewed; this technique can be used to observe [sunspots](#), as well as eclipses. However, care must be taken to ensure that no one looks through the projector (telescope, pinhole, etc.) directly. Viewing the Sun's disk on a video display screen (provided by a [video camera](#) or [digital camera](#)) is safe, although the camera itself may be damaged by direct exposure to the Sun.

Totality: It is safe to observe the total phase of a solar eclipse directly with the unaided eye, binoculars or a telescope, when the Sun's photosphere is completely covered by the Moon. During this period the sun is too dim to be seen through filters. However, viewing the Sun after totality can be dangerous.

When the shrinking visible part of the photosphere becomes very small, [Baily's beads](#) will occur. These are caused by the sunlight still being able to reach Earth through lunar valleys, but no longer where mountains are present. Totality then begins with the [diamond ring effect](#), the last bright flash of sunlight. At the end of Totality, the same effects will occur in reverse order, and on the opposite side of the moon.



Baily's beads

Eclipses and transits: In principle, the simultaneous occurrence of a Solar eclipse and a transit of a planet is possible. But these events are extremely rare because of their short durations. The next anticipated simultaneous occurrence of a Solar eclipse and a [transit of Mercury](#) will be on July 5, 6757, and a Solar eclipse and a [transit of Venus](#) is expected on April 5, 15232.

Only 5 hours after the transit of Venus on June 4, 1769, there was a total solar eclipse, which was visible in Northern America, Europe and Northern Asia as partial solar eclipse. This was the lowest time difference between a transit of a planet and a solar eclipse in the historical past.

The Myth and Rituals of Eclipses: There have been several popular superstitions attached with the eclipse and have been passed down the generations.

- Pregnant women are advised not to go outside during the eclipse to avoid having a blind baby or one with a cleft lip.
- It is also suggested that food cooked before the eclipse should be thrown out afterward as it becomes impure.
- Another interesting story attached with the eclipse is that those who are holding a knife or axe or any other sharp instrument during the eclipse will cut themselves.
- One should not eat nor prepare any food during the eclipse.

The Pomo: The Pomo tribe of Native Americans are from the northwestern US. The Pomo name for a solar eclipse was "sun got bit bear." They tell a story about a bear who goes out for a stroll along the Milky Way. Soon Bear met up with the Sun and the two began to argue about who would move out of the other's path. The argument turned into a fight, which was represented by an eclipse of the Sun. Eventually the Bear continued along his way, but soon met up with the Moon, the Sun's sister. Again, an argument ensue about who would move over and again the argument turned into a fight. Now there was an eclipse of the Moon. After the eclipse Bear continued on his way along the Milky Way and the cycle repeated.

Eclipses according to the Ge': The Ge' are among the Amazonian tribes of Brazil. They also believe that eclipses are a result of a fight between Sun and Moon. They say the eye of the Sun or Moon is pierced by a small boy who shoots them with an arrow.

The wound bleeds symbolized by the Moon turning reddish and dimming. A shaman removes the arrow and the wound heals.

Hupa Indians of northern California: The Moon is a man who has twenty wives and a house full of pets consisting of mountain lions, bears and snakes. To feed his pets, the man goes out to hunt. After the hunt he carries all the game back to his house for his pets, but they are not satisfied with what he has brought them. In anger, the pets attack the man, who begins to bleed. This is represented by the Moon turning a reddish colour during a lunar eclipse. One of the Moon's wives is Frog and when she sees the predicament her husband is in, she rushes to help him. Frog beats away the pets. Then she and the other wives collect up the Moon's blood and he can then recover.

Serrano Indians: The Serrano Indians of California believe an eclipse is the spirits of the dead trying to eat the Sun or Moon. So during an eclipse, the shamans and ceremonial assistants sing and dance to appease the dead spirits while everyone else shouts to try and scare the spirits away. Meanwhile, everyone avoids eating food with the idea that it would starve the spirits out.

Chinese: The Moon was represented by a mirror in China. During an eclipse, people beating on mirrors is a very old tradition. It was believed that a dragon swallowed the Moon during an eclipse and beating the mirrors would cause the dragon to cough it up and return it to the sky.

Total Solar eclipses in India: The total solar eclipse in India on July 22, 2009 was the longest total solar eclipse this century and the longest seen in India since August 18, 1868. The next big total eclipse in the country is going to take place on June 3, 2114. Between then and now, there's only one total eclipse, on March 20, 2034, and it would just be visible in Jammu & Kashmir. The line of totality traverses a distance of over 3,000 km. So, more Indians will be in the path of totality than ever before in the history.

- Three solar eclipses are described in Mahabharata. There's also reference to Krishna blocking the Sun with his *sudarshan chakra* to help Arjun in the battle.
- Abul Fazl writes in Akabarnama about Akbar visiting Kurukshetra during an eclipse in 1567.
- Jehangirnama accurately talks of an annular eclipse later traced to March 19, 1615.
- On October 17, 1762, a Diwali day, a fierce battle between the Sikhs and Afghan invader Ahmad Shah Abdali was abandoned when it became so dark during a total eclipse that stars came out.
- Helium was discovered by Julius Janssen while observing solar spectrum during a total eclipse in India on August 18, 1868.

Compiled by: Neha and Utkarsh



CHILDREN SECTION

Our National Flag

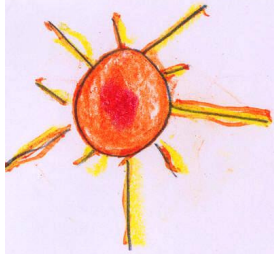


Brahmi

unoyal

UKG





sunflower



By:
Dhanvi Uniyal
UKG



NAME:- GARIKAPATI NISSI KIRANMAYEE
CLASS:- IV-B



G.NIHARIKA KIRANMAYEE
~~II~~ II-B



By : PUSHPINDER KAUR
CLASS - X
DA-V SEN. SEC. PUBLIC SCHOOL



Pooja Pati
(Paper Cutting)



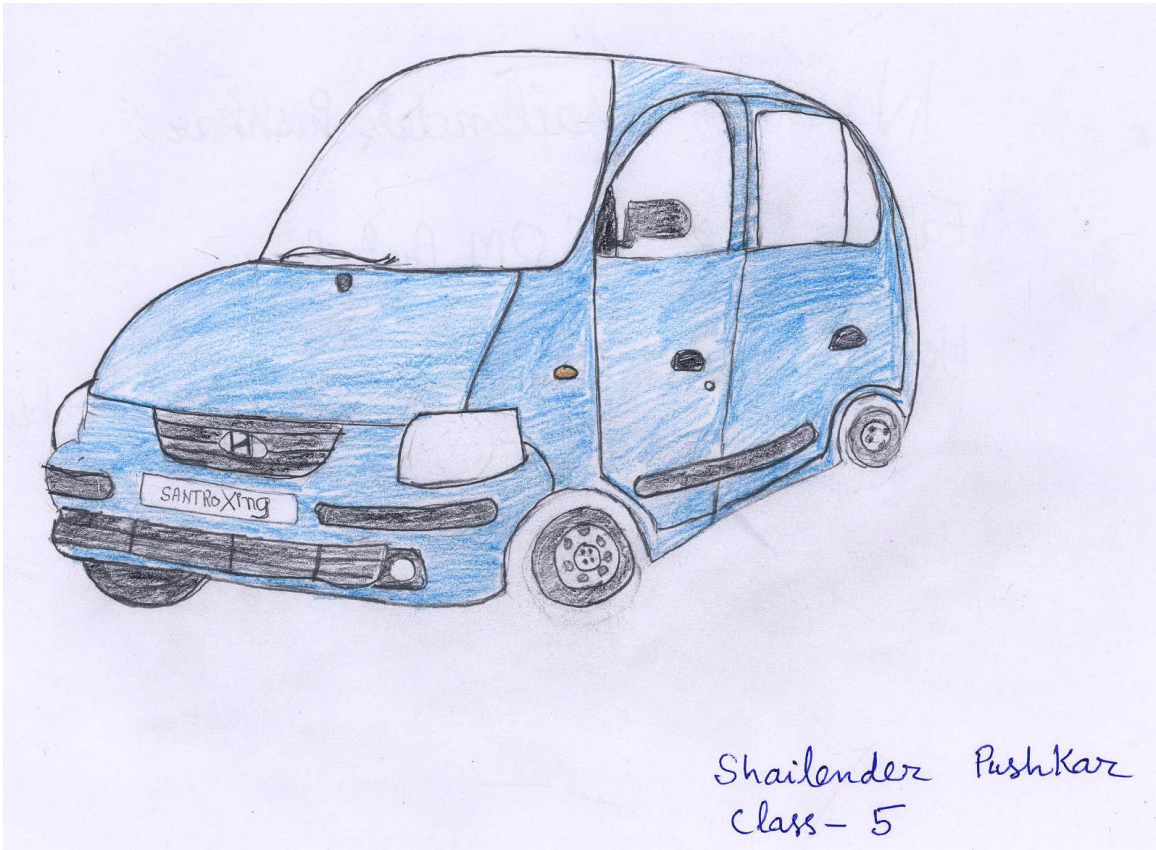
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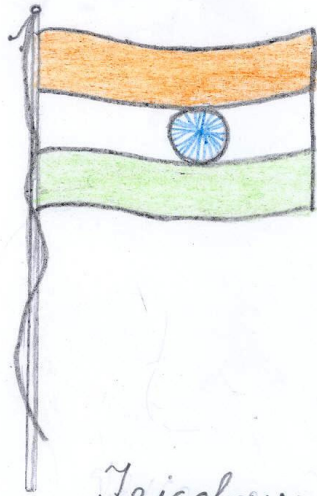
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School - D.A.V. Public
School Palampur



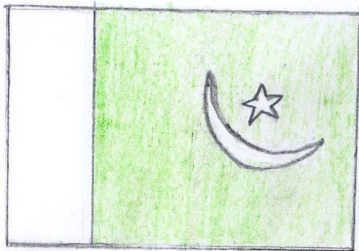
ASAMYA SHARMA



Shailender Pushkar
class - 5



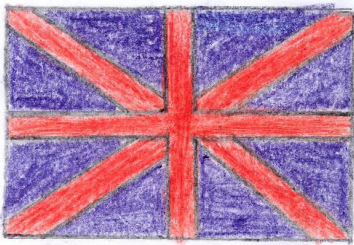
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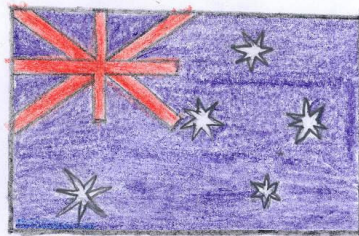
Pakistan



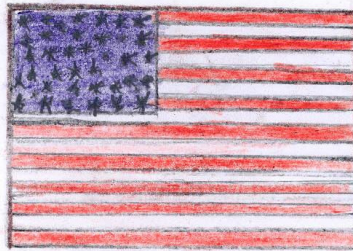
China



United Kingdom



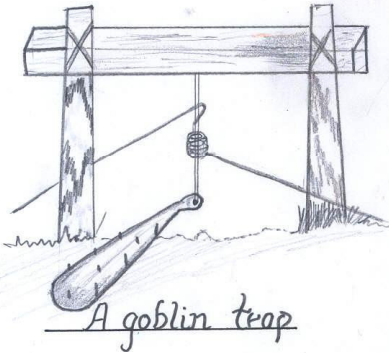
Australia



U.S.A.

Kriten

Humans too are evil spirits !!!



A goblin trap

Goblins are such tricky creatures,
Living in their caves,
They trap you in their strange traps.
And keep you as their slaves.



An ogre

Ogres are such nasty creatures,
This is what they do:
They pluck the bones from your skin
And grind them into stew.



A troll

Trolls are such wicked creatures,
Hiding near the roads
If you let them grab your head,
They'll squeeze it till it explodes.



A human

Humans are such awful creatures
Perhaps, the worst of all
They'll chop the trees all around
And then they'll build a mall.

From-
Kavya Sood

LIFE

Life is not very easy
You have to struggle,
If you want success,
You have to take trouble,

Life is a roller coaster,
There are ups and downs,
But you will never fall from it
As earth is round,

Say good bye to enjoyment,
For special three years
I can assure you will gain success
For all years and years

Shivangi Vats