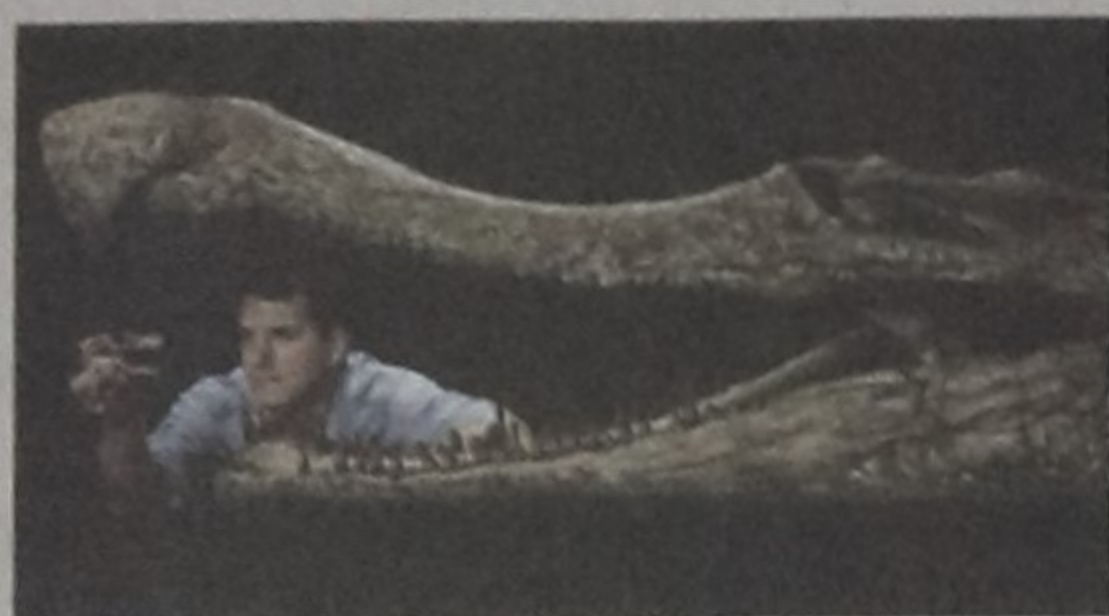


DHAKA TUESDAY NOVEMBER 24, 2009, E-MAIL: science&life@thedailystar.net



NEW FINDINGS

Giant croc fossils found



The jaws of SuperCroc

A 20-foot-long crocodile with three sets of fangs like wild boar tusks roamed parts of northern Africa millions of years ago, researchers reported recently. While this fearsome creature hunted meat, not far away another newly found type of croc with a wide, flat snout like a pancake was fishing for food.

And a smaller, 3-foot-long relative with buckteeth was chomping plants and grubs in the same region.

The three new species, along with new examples of two previously known ancient crocodiles, were detailed on November 19 by researchers Paul Sereno of the University of Chicago and Hans Larsson of McGill University in Montreal. They spoke at a news conference organized by the National Geographic Society, which sponsored the research.

"These species open a window on a croc world completely foreign to what was living on northern continents," Sereno said of the unusual animals that lived 100 million years ago on the southern continent known as Gondwana.

Hans Dieter Sues of the Smithsonian Institution's National Museum of Natural History said the discovery revises the ideas of what crocodile-type reptiles were like.

Source: AP



Himalayan black bears get GPS collar

WILDLIFE experts in Indian-controlled Kashmir have fitted black bears with satellite-tracking collars to study their behaviour and help conserve the endangered animals, officials said recently.

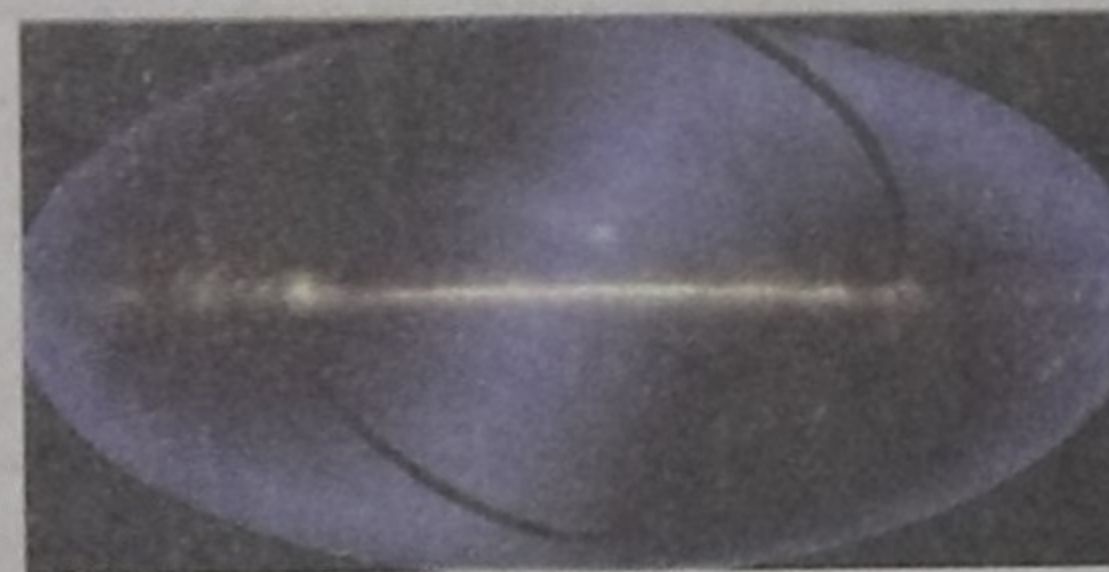
"This is the first time in India that Himalayan black bears have been fitted with a GPS collar," wildlife warden Rashid Naqash told AFP, adding that there are just 300 of the animals in the region.

These collars will help in studying the behaviour and habitat of the Himalayan black bear, he said, adding the "step will go a long way in conserving the endangered species."

A team of wildlife experts have put collars on three black bears -- a male, a female and a cub -- in the Dachigam national park on the outskirts of state's summer capital Srinagar. Three more are likely to receive them soon, said Naqash, who is in charge of the park which sprawls over an area of 140 square kilometres (54 square miles).

Source: AFP

The heart of heaven



THIS NASA handout image shows nearly the entire sky, as seen in infrared wavelengths and projected at one-half degree resolution, assembled from six months of data from the Infrared Astronomical Satellite, or IRAS. The bright horizontal band is the plane of our Milky Way galaxy, with the center of the galaxy located at the centre of the picture.

Source: AFP



SCIENCE QUIZ

Quiz 1

Oncology is the study of

- Cancer
- Mammals
- Soil
- Birds

Quiz 2

Who invented the ball point pen?

- Waterman
- Lazlo brio
- Wilson
- Oscar

Answers to last week's Quiz

Quiz 1: c) Thomas Edison.

Quiz 2: b) Cell phone.

NIPAH ENCEPHALITIS

Beating a killer virus

ABID ANWAR

IF you are (shouldn't you?) afraid of contracting a disease that has no remedy (about almost 100 per cent case-fatality rate), then be cautious when taking the raw date-palm juice. You need to be more cautious, if the source of the juice is unknown. However, if the juice is collected using a simple local technology, then you can safely drink the juice.

This is the season of sweet date juice. However, you need not deny yourself the tasty juice; just be sure it has been collected using the correct procedure.

Since 2001 when the aetiology (study of the cause of disease) was confirmed, 96 out of 133 affected persons in the central and western regions of Bangladesh died of a febrile illness called Nipah encephalitis. The disease was contracted from drinking the raw date-palm juice contaminated by a fruit-bat (the species *Pteropus giganteus* belonging to *Paramyxoviridae* family). The juice collector cut a hole into the tender part of the trunk near its top and draws the juice. The juice then collects into an earthen pot. But the juice is often sipped by these bats, and Nipah virus is transmitted from their droplets, i.e. saliva, urine and faeces.

Aetiology of Nipah encephalitis was first known during an outbreak in Malaysia in 1998 and Singapore in 1999. Frequent outbreaks in Bangladesh in the recent past drew attention of medical scientists and health professionals worldwide. The Institute of Epidemiology, Disease



Raw date palm juice being collected in an earthen pot

Prevention and technical assistance of ICDDR,B scientists, initiated control measures on emergency basis.

A simple technique to quarantine the pots, along with the hole from where the juice oozes through a narrow bamboo-trail, with anything capable of barring the bats' access to the system can warrant purity of the juice. A bamboo-frame wrapped with rugs of any kind fastened around the juice-collection system has been tried and found effective. In addition to this preventive measures, two low-cost drugs *Amiloride* and *Chloroquine* commonly used in the treatment for hypertension and malaria respectively are under trial, following a breaking news published in ScienceNOW in April 2009 that a group of scientists led by Robin Buckland of the French National Institute for Health and Medical

Research (INSERM) found these to be efficacious against Nipah encephalitis.

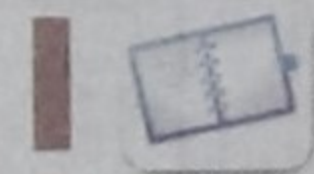
While a Discovery Channel documentary (which also includes the Bangladesh situation) is currently being aired for mass awareness about this easily-preventable but a fatal emerging health problem, our local electronic media are unfortunately silent. However, airing relevant tips from various channels could be a life-saving service to the nation. This time of the year is appropriate for a mass-media campaign to activate an inter-personal communication network at the grassroots level since juice-collection and intake start from the beginning of autumn.

The writer is a chemist, poet, literary critic, and lyricist.



Bat that carries the killer virus

Control and Research (IEDCR) of the Bangladesh Government, with financial support from the US-based Centers for Disease Control and



DEPTHS OF MATTER

Big Bang machine starts again

SCIENTISTS moved Nov 22 to prepare the world's largest atom smasher for exploring the depths of matter after successfully restarting the \$10 billion machine following more than a year of repairs.

Scientists switched on the world's largest atom smasher for the first time on Friday, Nov. 20, 2009 since the \$10 billion machine suffered a spectacular failure more than a year ago, circulating beams of protons in a significant leap forward for the Large Hadron Collider.

The nuclear physicists working on the Large Hadron Collider were surprised that they could so quickly get beams of protons whizzing near the speed of light during the restart late

Friday (Novem 20), said James Gillies, spokesman for the European Organization for Nuclear Research.

The machine was heavily damaged by a simple electrical fault in September last year.

Some scientists had gone home early Friday and had to be called back as the project jumped ahead, Gillies said.

At a meeting early Saturday (Nov 21), "they basically had to tear up the first few pages of their PowerPoint presentation which had outlined the procedures that they were planning to follow," he said. "That was all wrapped up by midnight. They are going through the paces really very fast."

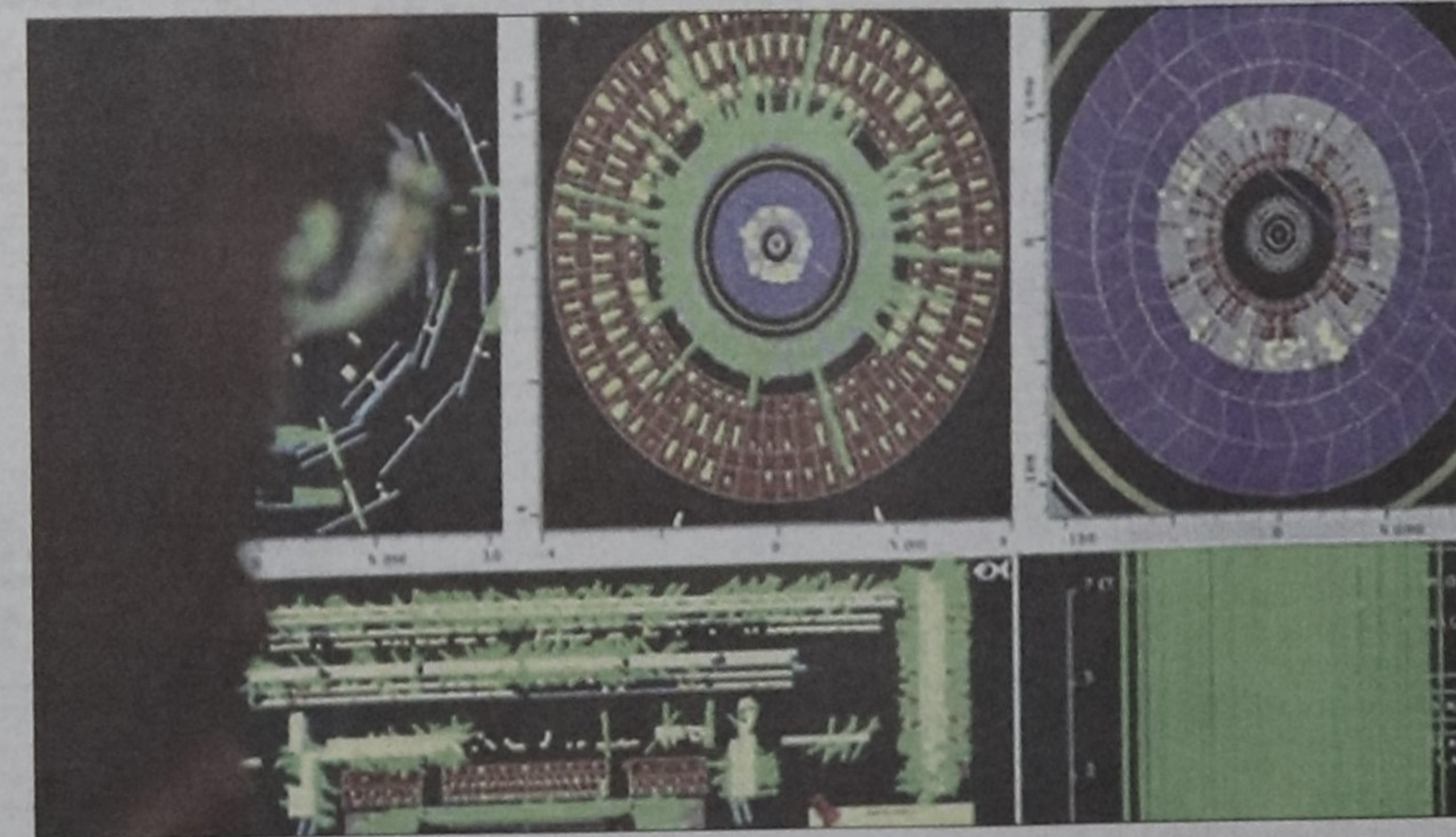
The European Organization for

Nuclear Research has taken the restart of the collider step by step to avoid further setbacks as it moves toward new scientific experiments - probably starting in January - regarding the makeup of matter and the universe.

CERN, as it is known, had hoped by 7 a.m. (0600 GMT) Saturday (Nov 21) to get the beams to travel the 27-kilometer (17-mile) circular tunnel under the Swiss-French border, but things went so well on earlier evening (Nov 20) that they had achieved the operation seven hours earlier.

Praise from scientists around the world was quick.

Source: AP



A European Center for Nuclear Research (CERN) scientist controls a computer screen showing traces on Atlas experiment of the first protons injected in the Large Hadron Collider (LHC) during its switch on operation at the Cern's press center near Geneva, Switzerland



OUR LEADING LIGHTS

Abdullah-Al-Muti Sharfuddin

JAMAYET ALI

ABDULLAH-AL-Muti Sharfuddin (1930-1998) was a renowned educationist and popular science writer. He was born in January, 1930 in the village Phulbari in Sirajganj district. He stood first class first in MSc (Physics) examination from the University of Dhaka in 1953. He also stood first class first in B.Ed examination from the University of Dhaka in 1957 and then completed M.A. in Education from the University of Chicago, Illinois, U.S.A. in 1960. He obtained Ph.D. (Education) from the same University in 1962.



He started his career as a Lecturer in Physics at the Rajshahi Government College in 1954. He became Professor in the same college in 1955. He held the post Director, Education Extension Centre, Dhaka from 1965 to 1973.

Abdullah-Al-Muti started writing on science since his school days. At that time he contributed articles to the Dainik Azad ('Mukul Mahfil') and Monthly Mohammadi. He was also associated with editing a Tabloid size magazine 'Mukul' and 'Mukul Fouz'.

Side by side with science writing he also wrote on problems and prospects of education in the Monthly 'Hullor' and 'Dilruba'.

He authored 27 books on science and education in Bengali, translated 10 books from English into Bengali, published over 500 original papers and articles (in English and Bengali) on science and education, participated in over 300 talks over Radio Bangladesh and Bangladesh Television on science and education. He was the Executive Editor of Unesco Batayan, a quarterly Bengali edition of Unesco Courier from 1982 to until his death.

He died on November 30, 1998.

Awards received

The awards he got from different socio-cultural organizations at home and abroad include:

- UNESCO Award for literature in 1969;
- Bangla Academy Award for literature in 1975;
- Dr. Quadrat-e-Khuda Gold Medal for science writing in 1979;
- Ziaur Rahman National Award for Education in 1981;
- UNESCO Kalango prize (International Award) for popularization of science in 1983;
- Ekushey Padak (State Award) for Education in 1985;
- Kazi Mahabubullah Award for science in 1987;
- and, Agrani Bank Award for children's literature in 1988, etc.

Organisations he was associated with

He was the member and life member of various socio-cultural and scientific organizations like Asiatic Society, Bangla Academy, Islamic Academy of sciences, Bangladesh Association of Scientists and Scientific Professions, Bangladesh Association for the Advancement of Science, Commonwealth Association of Science, Commonwealth Association of Science, Mathematics and Technology etc.

Jamayet Ali is a science writer and former PRO of BCSIR.



LOST IN TIME

Terra-Cotta Warriors



PLATOONS of clay soldiers were buried with China's first emperor, Qin Shi Huang Di, to accompany him during his eternal rest. These life-size figures, shown here during excavation at the emperor's burial complex near the city of Xi'an in China's Shaanxi Province, are more than 2,200 years old.

The tomb, which extends over 22 square miles (57 square kilometers) and is said to have required a labour force of 700,000 to build, was discovered by a group of peasants digging a well in 1974.

For more than 2,200 years the terra-cotta army has silently guarded the grave of the great First Emperor Qin, during whose ruthless reign China was first united.

The incredible array of unique warriors and horses, equipped with chariots and weapons, was hidden until 1974. In that year peasants digging a well near the ancient Chinese capital of Xi'an made one of the greatest archaeological discoveries of all time.

Today work continues at the site, where as many as 8,000 life-size warriors could finally emerge from the Chinese soil.