

Discovery

About the Cover



CELEBRITY OF THE MONTH

Erik Acharius

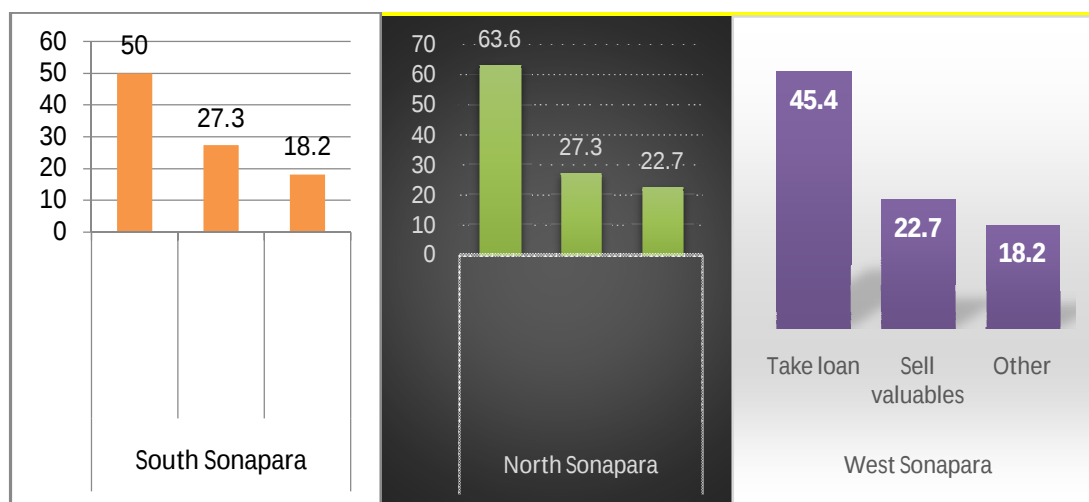
259th Birthday (10 October 1757 – 14 August 1819)

Father of lichenology

Acharius, Erik (1757-1819), Swedish botanist, the father of lichenology was born on the 10th of October 1757. He devoted himself to the study of lichens, and all his publications were connected with the class of plants, his *Lichenographia Universalis* being the most important. He was a member of the Royal Physiographic Society in Lund (1795), the Royal Swedish Academy of Sciences (1796), the Linnean Society of London (1801) and the Royal Society of Sciences in Uppsala (1810). He awarded Acharius Medal for his lifetime achievement in lichenology. He continued to work restlessly on his lichens, using all spare time left from his daily hospital duties. His *Synopsis Methodica Lichenum* was printed in Lund in 1814, but it was naturally a great disappointment that his Alma Mater should turn down his offer to buy his herbarium. During the winter of 1819 he had suffered from minor strokes, which caused him problems with hearing and balance, but he persisted with his hard work during spring and summer. In a letter to Elias Fries dated 25 May 1819 Acharius mentions his sickness, that he was suffering from fatigue, and worried about how it would turn out to be during the coming autumn, a season. Acharius would not live to see again. It is told that he had been sitting for many days in his garden in the hot sun working enthusiastically on a lichen collection he had received from Saragossa in Northeastern Spain, but on 13 August he suffered a massive stroke, and on the next day by 14th of August 1819 he died at the age of 61 at vadstena (Image: sonurai.com/wallpaper).

Socio-economic conditions of the fishing community of Rezu khal in Ukhiya, Cox's bazar

Md. Osman, Md. Simul Bhuyan, Aysha Akhtar and Md. Shafiqul Islam

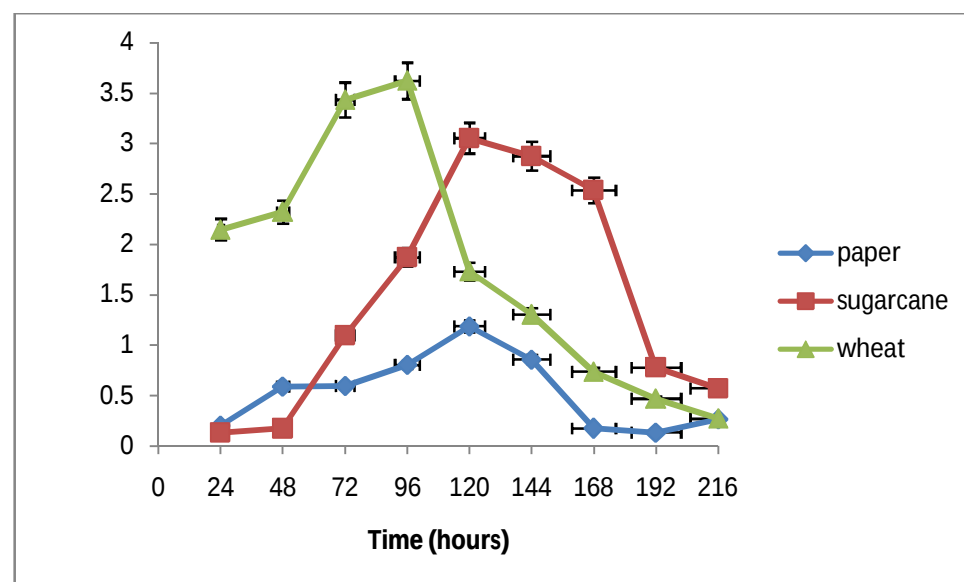


The present research work was conducted to assess the socio-economic conditions of the fishing community of Rezu khal, Ukhiya. A structured questionnaire survey was done on 60 fishermen. Education status showed that, only 4.7% of the fishers having secondary education while 48.2% of them having no formal education at all. There was a prevalent relationship of contentment of fishermen, children's school, taking risk at work with the fishing income that was analyzed by One Way ANOVA (SPSS v.22) at $p < 0.05$. In the present survey, almost all the members of the community were found to be involved in fishing activities year round. Housing condition showed that around 52% of the houses were semi pacca. Regarding (70%) people use tube-wells for drinking water and (71.4%) for sanitation system. 19% of the respondents were found to have no sanitary latrine. Their monthly income ranged between TK. 3000 to TK. 6000 (45.5%). For credit source, (28.6%-57.1%) of respondent fishers were found to be dependent on dadondar. Principal Component Analysis (PCA) was done to isolate variables that may be sufficient for socio-economic study and Correlation matrix was done to find out the relation among variables.

Discovery, 2016, 52(250), 1933-1940

Cellulase production by *Aspergillus Niger*, *Trichoderma Harzianum* and *Penicillium Chrysogenum* using some selected agricultural wastes

Bukar A, Abbas MI, Milala MA, Ali AA



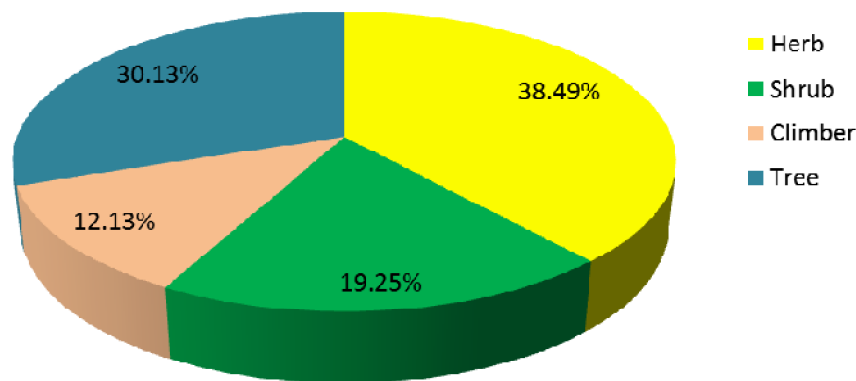
With increasing cost of production in manufacturing industries, coupled with unending accumulation of organic wastes in the environment, researchers are faced with challenge of search for cheap raw materials and enzyme hyper-producing microorganisms

for the production of various enzymes used in different sectors of manufacturing processes. It was with this objective that this research investigated the suitability of using some selected agricultural wastes (wastepaper, sugarcane bagasse and wheat bran) as substrates for cellulase production using some fungal species. Three fungal species including *Aspergillus niger*, *Trichoderma harzianum* and *Penicillium chrysogenum* were isolated from different sources and screened for cellulase production. Cellulase producing species were inoculated into basal media containing one of the substrates as sole carbon source and incubated for 216 hours at 30°C. Cellulase activity was monitored every 24 hours and was shown to reach its peak between 96 and 144 hours. *A. niger* was observed to produce highest (5.36IU) amount of cellulase enzyme after 96 hours using wheat bran, followed by *T. harzianum* (3.62IU) and *P. chrysogenum* (3.62IU) using the same substrate. Paper was shown to support less cellulase production using all the fungal species except *A. niger* where the highest activity (1.38IU) observed was greater than that of sugarcane bagasse (0.97IU). *T. harzianum* was shown to produce less cellulase compared to other species using paper and wheat bran but performed better using sugarcane bagasse. This study therefore, revealed that the agricultural wastes used could be excellent raw materials for cellulase production and *Aspergillus niger* and *P. chrysogenum* could be better candidates using wheat bran and sugarcane bagasse.

Discovery, 2016, 52(250), 1947-1953

Study of Angiosperm Plant Species at Sadar Upazila of Naogaon District, Bangladesh

Jesmin Nahar, Mahbubur Rahman AHM



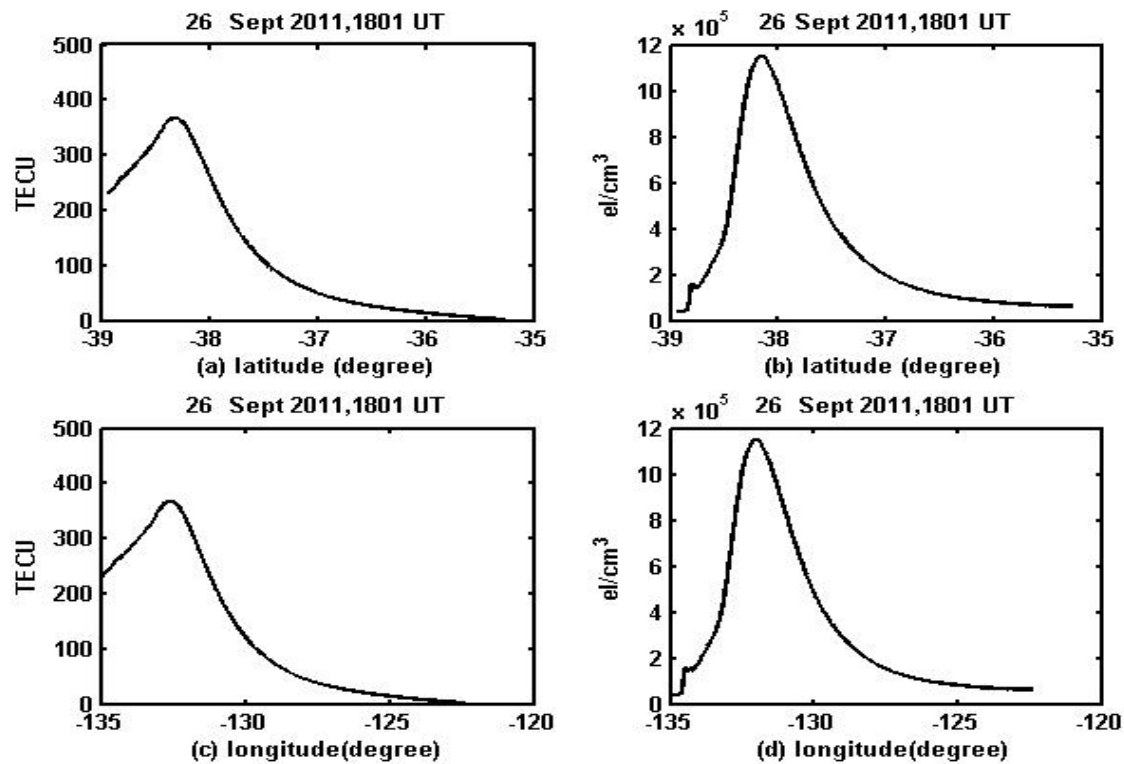
Study of Angiosperm plant species at sadar upazila of Naogaon district, Bangladesh conducted during December 2013 to July 2015. A total of 239 species belonging to 198 genera under 83 families were recorded. Of these, Magnoliopsida (Dicotyledones) is represented by 206 species under 167 genera and 74 families while Liliopsida (Monocotyledones) is represented by 33 species under 31 genera and 9 families. Cucurbitaceae is the largest family in Magnoliopsida represented by 13 species and, in Liliopsida, Poaceae is the largest family with 10 species. Habit analysis shows that herbs, shrubs, climbers and trees are represented by 92, 46, 29 and 72 species, respectively. Amaranthaceae, Asteraceae, Apocynaceae, Caesalpiniaceae, Convolvulaceae, Cucurbitaceae, Euphorbiaceae, Fabaceae, Moraceae, Malvaceae, Mimosaceae, Myrtaceae, Poaceae, Rutaceae and Solanaceae are the dominant families with high species diversity. For each species botanical name, local name, habit, phenology, relative occurrence, plant population, voucher number and family were provided.

Discovery, 2016, 52(250), 1963-1978

Total Electron Content and Electron Density Profile Observations during Geomagnetic Storms using COSMIC Satellite Data

Niraj Bhattarai, Narayan P Chapagain, Binod Adhikari

Total Electron Content (TEC) and electron density are the basic parameters, which determine the major properties of the Ionosphere. Detail study of the ionospheric TEC and electron density variations has been carried out during geomagnetic storms, with longitude and latitude, for four different locations: (24°W-14°W, 25°S-10°S); (53°W- 46°W, 04°N-14°N); (161°E-165°E, 42°S-34°S), and (135°W-120°W, 39°S-35°S) using the COSMIC satellite data. In order to find the background conditions of the ionosphere, the solar wind parameters such as north-south component of inter planetary magnetic field (Bz), plasma velocity (Vsw), AE, Dst and Kp indices, have also been correlated with the TEC and electron density. The results illustrate that the observed TEC and electron density profile significantly vary with longitudes and latitudes as well. This study illustrates that the values of TEC and the vertical electron density profile are influenced by the solar wind parameters associated with solar activities. The peak value of electron density and TEC increase as the geomagnetic storms become stronger. Similarly, the electron density profile varies with altitudes which peaks around the altitude range of about 180-280 km, depending on the strength of geomagnetic storms. The results clearly show that the peak electron density shifted to higher altitude (from about 180 km to 300 km) as the geomagnetic disturbances become stronger.



Discovery, 2016, 52(250), 1979-1990

ANALYSIS

What could be the Impact of the Community Financing Approach of BRAC in Health Care to Achieve the Health Goals of MDG in Bangladesh?

Anwarul Islam KM

A closure look at the indicators makes it evident that the achievement of the health goals of MDG does not require high quality health care, doctors or expensive technology. Rather the targets could be fulfilled by creating a health service network targeting the goals, an efficient group of health workers including nurses, paramedics, midwife in the accessible distance in need. BRAC have a large health service network that provides mainly the basic health care services especially to the woman. BRAC is working in 70,000 villages and 2,000 slums, reaching three quarters of the entire population with an integrated package of health. They are also providing health insurance service to the borrowers where MFIs are insurance company, health care provider and also has direct link to the clients and all these aspects reduces the twin problem of moral hazard and adverse selection.

Discovery, 2016, 52(250), 1997-2003

The Relationship between the Macroeconomic Factors and Stock Market Price: Empirical Evidence from Bangladesh

Anwarul Islam KM

This paper examines the changes of the stock price as the consequence of the movement of the macroeconomic factors. Here money supply, inflation rate, exchange rate, interest rate and index of production are employed to judge for explaining power of the variability of the stock price and find out the relationship with the stock price. Multiple regression analysis is conducted to find out the relationship macroeconomic factors with the stock price. All share general price index of the Dhaka Stock Exchange is used as a dependent variable. No significant relationship is found between the stock price and exchange rate, money supply, index of production, inflation rate except the interest rate. It is known that macroeconomic factor works as the systematic risk factor for the asset pricing. Again government is inclined to know which factors have significant affect on the stock market index.

Discovery, 2016, 52(250), 2006-2014

The Relationship between Intellectual Capital, Firms' Market Value and Financial Performance: Empirical Evidence from Bangladesh

Anwarul Islam KM

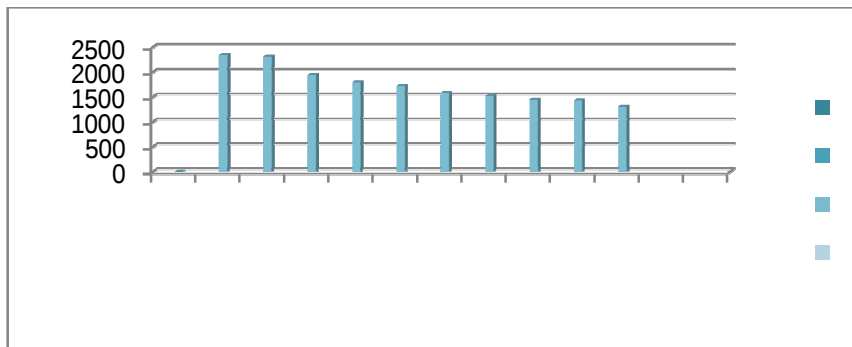
This paper examines to investigate the empirically the relation between the value creation efficiency and firms' market valuation and financial performance by using data drawn from 22 banks enlisted in the DSE. By using Pulic's Value Added Intellectual Coefficient as the efficiency measure of capital employed and intellectual capital, also examines the relationship between corporate value creation efficiency and firms' market-to-book value ratios, and explores the relation between intellectual capital and firms' financial performance. Correlation and regression analysis have been conducted on the collected data. The results, although do not show any strong association between the studied variable, extend the understanding of the role of intellectual capital in creating corporate value and building sustainable advantages for companies in emerging economies, where different technological advancements may bring different implications for valuation of intellectual capital.

Discovery, 2016, 52(250), 2023-2034

CASE STUDY

Development of Bangladesh through SMEs Financing: A Case Study on IDLC Finance Limited

Anwarul Islam KM



SMEs (Small and Medium Enterprises) is very much crucial for overall development of the economy. Several banks and other non-banking financial institutions are now concentrating on this sector very actively. Industrial Development Leasing Company (IDLC) of Bangladesh Limited started its operation in the year 1985 as the pioneer leasing company as to facilitate lease- financing and capital investment in industrial sector. Over the years, the company has evolved itself as a multi-product non-banking financial institution providing wide range of products and services. Over the last two decades IDLC has contributed relentlessly in the country's transition into a developing country and has emerged as Bangladesh's leading multi product financial institution. The company now offers a multitude of diverse financial services and solutions to both institutional and individual clients to cater for their unique requirement. In this research paper, I have tried to focus on various role and aspect of the SMEs banking. The product and service offered for the SMEs clients, portfolio structure of the SMEs banking, marketing strategy for the SMEs clients and the total credit operation of the SMEs banking by IDLC Finance are covered through this research.

Discovery, 2016, 52(250), 2041-2053

PERSPECTIVE

Approaches to Human-Wildlife Conflict Management in and around Ayubia National Park, Khyber Pakhthunkhwa, Pakistan

Tufail Shakeel

The present study has been designed to study the human-wildlife conflict management in and around Ayubia National park, KPK Pakistan. A total of 14 animal species has been studied in seven villages to investigate the conflict ratio. The results showed that there is no major significant difference conflict between villagers and the animals (i.e. $p=0.05$). However leopards are observed to be most conflicted animal in and near Ayubia National park. While Cuckoo, Pheasant and the parrots were the less conflicted animals in and near Ayubia National Park.

Discovery, 2016, 52(250), 2059-2062