



Bangladesh Academy of Sciences NEWSLETTER

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Congratulations to Emeritus Scientist Dr. Firdausi Qadri

Emeritus Scientist Dr. Firdausi Qadri, Fellow, BAS has been awarded the 'Independence Award 2023', the highest civilian award in the country for her enormous contribution in Research and Training. A hearty congratulation to Dr. Firdausi Qadri.



Dr. Firdausi Qadri receiving award from Sheikh Hasina, Hon'ble Prime Minister, Government of the People's Republic of Bangladesh



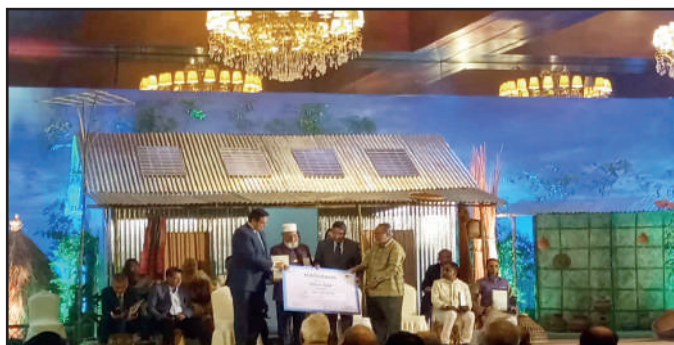
Dr. Firdausi Qadri delivering her speech at the award ceremony



Congratulation to Dr. Firdausi Qadri by BAS

Congratulations to Dr. MA Hamid Miah

Dr. MA Hamid Miah, Fellow, BAS and Former Executive Chairman, Bangladesh Agricultural Research Council has been honored with 'Ajibon Shommanona' award by the Standard Chartered-Channel i Agro Award 2022 as recognition of his lifelong contribution in Agriculture. A hearty congratulations to Dr. MA Hamid Miah.



Dr. MA Hamid Miah, Fellow BAS receiving "Lifetime Achievement Award" from Dr. M A Razzaque, Hon'ble Minister for Agriculture, Government of the People's Republic of Bangladesh



NATIONAL EVENTS

Academy Lecture on "Black and White Chemistry of Jute" by Prof. Dr. Mubarak Ahmad Khan, Fellow, BAS and Scientific Advisor, Bangladesh Jute Mills Corporation

Bangladesh Academy of Sciences (BAS) organized the Academy Lecture on "Black and White Chemistry of Jute" on 24 January 2023 at 11:00 am at the Conference Room of the Centre for Advanced Research in Sciences (CARS), University of Dhaka, Dhaka 1000. Prof. Dr. Mubarak Ahmad Khan was the speaker.

Then the Chair, Prof. Dr. Muhibur Rahman welcomed all participants and talked about the history of jute chemistry in Bangladesh. About 100 Fellows, Faculty members, scientists, researchers and students of different disciplines were present and enjoyed the presentation. The Chair then called upon Dr. Mubarak Ahmed Khan to start his Academy Lecture.



Prof. Dr. Mubarak Ahmad Khan presentting his lecture



*Chief Guest, Emeritus Prof. Dr. AK Azad Chowdhury
delivering his speech*

A novel facility from green technologies is highlighted to integrate cellulose and lignin based bio-materials extraction and transformation into a broader spectrum of marketable and value-added products with a zero-waste approach. With ever-increasing scientific knowledge, worldwide economic and environmental consciousness, demands of legislative authorities, and the manufacture, use and removal of petrochemical-based by-products, from the last decade, there has been increasing research interests in the value or revalue of cellulose and lignin-based materials. The potential characteristics like natural abundance, renewability, recyclability and ease of accessibility all around the year around the globe, all make residual biomass an eco-attractive and petro-alternative candidate. In this context, many significant research efforts have been made to change/replace the petroleum-based economy with a bio-based economy, with an aim at developing a comprehensively sustainable, socially acceptable and eco-friendly society.

New generation of sustainable and low-cost biodegradable different materials which are alternatives to plastic materials from jute such as packaging materials (Sonali Bag), antimicrobials resistant and disposable PPE, transparent and antimicrobials resistant masks, sanitary napkin, super absorbent, straw, one-time glass and plate, egg rack, etc. was developed. Other composite materials such as fire resistant composite, bullet proof composite, building composite (block, jutin, tiles, etc) were also developed. He also developed a newly vegan leather from cellulose. His Recent trends have been shifted to produce composites of micro and nano-cellulose fiber and crystal for numerous applications among which the most important ones are its use in a medical and environmental perspective. Biodegradable glue, bio-oil, cement materials, and other composite materials were developed from lignin. The present research work mainly focuses on various aspects of bio-refinery as a sustainable technology to process cellulose and lignin 'materials' into value-added products. Innovations in the bio-refinery world are providing a portfolio of sustainable and eco-efficient products to compete in the market presently dominated by petroleum-based products and, therefore, it is currently a subject of intensive research.



Participants in the lecture



Participants in the lecture

In this context, the Chief Guest advised to modify jute polymer and lignin and mentioned that Association of Academies and Society of Sciences in Asia (AASSA) appreciated BAS for organizing a webinar on Plastic Pollution.

Prof. Dr. Mesbahuddin Ahmed, Treasurer, BAS asked about the cost of Sonali bag that Dr. Mobarak has developed. Dr. Mubarak Ahmed Khan replied that the price of sample bag would be about Tk. 10/bag, but when produced in large quantity the price will be about Tk. 4/bag. Ultimately, when the bag will be produced and sold commercially in the market the price will come down to Tk 2 per bag. Prof. Riazul Islam, Dept. of Biochemistry and Molecular Biology of Dhaka University talked about the chemical retting of jute fiber.

Prof. Muhibur Rahman wanted to know about enhancing the quality of jute.

Prof. Haseena Khan replied that genetic transformation of jute by the tissue culture method is not straight forward, but her lab has developed an in-planta method of jute transformation which bypasses the dependence on tissue culture and it has been used to lower the lignin content of jute fibre.

At the end, Prof. Dr. Haseena Khan expressed thanks to all for their participation in the lecture and making it a success.

13th BAS-FSIBL National Science Olympiad 2023, 11 February 2023, Curzon Hall, Dhaka University

The 13th BAS-FSIBL National Science Olympiad 2023 was held successfully this year at both the divisional and the national levels under the sponsorship of the First Security Islami Bank Ltd (FSIBL). The Science Olympiad 2023 at the divisional levels was held on Friday 13 January 2023 at 6 centers in the metropolitan Dhaka and 28 centers throughout the country.



Picture of National Anthem and flag hoisting



Address by Prof. Dr. M Shamsher Ali, Convener, Science Olympiad 2023

The 13th Science Olympiad 2023 at the national level was held on Saturday 11 February 2023 at the Curzon Hall Premises, Dhaka University. The event started at 9.00 am with the National Anthem and flag hoisting. Pigeons balloons and festoons were released by the Fellows and guests during inauguration. Prof. Dr. M Shamsher Ali, Prof. Dr. Haseena Khan, Prof. Dr. Abdul Alim, Prof. Dr. Yearul Kabir, Prof. Dr. Mohammed Almujaaddade Alfassane and Mr. Abdur Rahim Khan of First Security Islami Bank spoke in the inauguration, encouraged and inspired the students to study science for the development of the country. The Olympiad 2023 examination started in the Curzon Hall on all the three floors of auditorium at 10:00 am and continued for one and a half hours.



Picture of examination hall



Question and Answer session from audience

After the examination, there was an open discussion session for questions by the participating students. The invited speakers present in the open discussion were Prof. Dr. M. Tofazzal Islam, Prof. Dr. Mirza Hasanuzzaman and Prof. Dr. Mamun Al Mahtab, Fellows of BAS.

Emeritus Prof. Dr. M Shamsher Ali, Convener of the 13th BAS-FSIBL Science Olympiad was present as the Olympiad Speaker.



Emeritus Prof. Dr. M Shamsher Ali, Convener of the 13th BAS-FSIBL Science Olympiad delivering his speech



Prof. Dr. Haseena Khan, Secretary, BAS delivering her speech



Receiving prizes from the guests



Special Guest, Mr. Syed Waseque Md. Ali, Managing Director, FSIBL delivering his speech

The Prize Distribution Ceremony for the winners of the National Science Olympiad 2023 began at 3:30 pm. **Dr. Dipu Moni, MP**, Hon'ble Minister, Ministry of Education, Govt. of the People's Republic of Bangladesh joined the ceremony virtually, as the Chief Guest and **Mr. Syed Waseque Md. Ali**, Managing Director, FSIBL was present as the Special Guest. The ceremony was chaired by **Dr. M A Hamid Miah**, Fellow, BAS. The Convener of the Olympiad, Organizing Committee **Prof. Dr. M Shamsher Ali** and Secretary, BAS **Prof. Dr. Haseena Khan** delivered the welcome speech and vote of thanks respectively. Then **Prof. Dr. Yearul Kabir**, Associate Secretary, BAS declared the names of the winners during Prize Distribution Ceremony. The Chief Guest, the Special Guest and BAS Fellows distributed prize money, medals, certificates, and science books to the winners of the School and College Groups of the Olympiad. About 450 students participated in the National Science Olympiad 2023. Certificates of participation were presented to all the participants.



Chief Guest, Dr. Dipu Moni, MP, Hon'ble Minister, Ministry of Education, Govt. of the People's Republic of Bangladesh joined the ceremony virtually.



Guests and prize winning students



Dr. MA Hamid Miah, Fellow, BAS, Chairman of Prize Distribution Ceremony is delivering his speech



Results declared by Prof. Dr. Yearul Kabir, Associate Secretary, BAS

Academy Lecture on “Personality Traits of Drug Addicted Subjects and Association of Single Nucleotide Polymorphisms (SNPs) with Drug Addiction in Bangladeshi Population” by Prof. Dr. Yearul Kabir, 21 March 2023.

Bangladesh Academy of Sciences (BAS) organized the Academy Lecture "Personality Traits of Drug Addicted Subjects and Association of Single Nucleotide Polymorphisms (SNPs) with Drug Addiction in Bangladeshi Population". This was held on 21 March 2023 at 12:00 noon at the Training Room of the Centre for Advanced Research in Sciences (CARS), University of Dhaka, Dhaka 1000. Prof. Dr. Yearul Kabir, Fellow, BAS and Professor of the Department of Biochemistry and Molecular Biology was the speaker.

Emeritus Professor Dr. A K Azad Chowdhury, President, BAS was present at the Lecture as the Chief Guest. Prof. Dr. Choudhury Mahmood Hasan, Vice President, BAS Council presided over the occasion. Prof. Dr. Haseena Khan, Secretary, BAS, moderated the lecture.

Prof. Haseena Khan took permission from the Chair of the session and the Chief Guest and started the program. Professor Khan then introduced the speaker Prof. Yearul Kabir with a short description of his life and work, academic and professional achievement. Professor Haseena Khan with the permission of the Chair, called upon Professor Kabir to start his Academy Lecture.



Prof. Dr. Yearul Kabir, Associate Secretary, BAS, Delivering Academic Lecture



Participants of the Academy Lecture

Dr. Yearul Kabir has been involved in genetic polymorphism studies on the Bangladeshi population for over a decade. He started his lecture by thanking the Chair, the Chief Guest, the Fellows, and the participants. His lecture was based on multiple studies performed in his laboratory on drug-addicted cases in Bangladesh and how specific genetic polymorphisms are linked to developing an addiction to drugs.

The first few slides of Dr. Kabir's presentation detailed out the overall drug addiction scenario worldwide and in Bangladesh. Drug addiction is a severe public health issue growing in developed and developing countries, which causes significant social and economic burdens. According to an international drug report, the use of drugs has seen a 26% increase in the last 10 years and is causing the deaths of millions every year. Cannabis and opioids are the most popular drugs worldwide but differ slightly from the Bangladesh scenario. Yaba has seen a massive rise in popularity in this country and has shifted the scenario from drugs like heroin and phensedyl. Genetic factors cause an easier transition of individuals from being users of drugs to getting addicted to drugs in about half of the cases. Most addiction cases in Bangladesh fall within the age group of 21-30 years, and the most significant cause of drug addiction is the influence of friends and environmental factor. Among the addicted, more than half are addicted to multiple drugs, and Dr. Kabir's studies have found the sense of feeling better and the sense of adventure to be the leading reasons behind changing of drugs.

His lab hypothesized that polymorphisms in a handful of interactively interconnected genes could be causing drug addiction in the Bangladeshi population. One of his studies showed that DRD2 Taq1A polymorphism in its homozygous mutated form caused a significant three-fold increase in the possibility of developing a drug addiction. The study also included BDNF polymorphisms but did not find any significant association. He also demonstrated that HTR1B and GRIN1 mutations were significantly linked to drug addiction in both heterozygous and homozygous mutated genotype forms, with homozygous mutations causing a three to four-fold increase in risk.

Dr. Kabir also explored the role of PDYN and DRD2 Taq1B gene polymorphisms on drug addiction and presented that PDYN mutation reduced the possibility of developing a drug addiction, whereas DRD2 Taq1B mutation increased the likelihood. He also mentioned that COMT in the heterozygous genotype and DRD4 in both heterozygous and homozygous mutated genotypes were significantly associated with the risk of substance abuse. Dr. Kabir then moved on to different aspects of drug addiction and linked them to genetic polymorphisms. He mentioned that the BDNF gene mutation was found to be linked to the age of onset for drug addiction among his study subjects. Moreover, DRD2 Taq1A mutation significantly influenced the development of addiction to multiple drugs. Finally, he discussed polymorphisms' effect on the relapse behavior and mentioned that PDYN and HTR1B polymorphisms are connected to developing relapse behavior.

It is common among drug-addicted cases also to be nutritionally deficient. Dr. Kabir's studies have demonstrated depleted vitamin C, E, and antioxidant levels in addicted patients. On the other hand, his studies have shown that addicted people have higher levels of PHP and TBARS and increased oxidative stress. In the end, Dr. Kabir talked about the limitations of his studies, e.g., small population size and lack of more stratified analysis because of a lack of information and recommended more association studies to be performed. He expressed that studies like these will help prevent addiction and improve addiction treatment strategies. He concluded his lecture by saying that being prone to addiction does not mean one would certainly become addicted; rather, it means that the person has to be careful.



Address by Emeritus Prof. Dr. AK Azad Chowdhury, Chief Guest and President, BAS

The chair then declared the floor open for free discussion.

Students, faculty members and BAS Fellows present in the lecture asked questions and Professor Kabir replied to those. Maj. Gen. (Retd.) Prof. Dr. ASM Matiur Rahman an expert on the topic mentioned about the present situation of the drug-addicted people. Sometimes drug is medicine and it is required. The Chief Guest, Emeritus Prof. Dr. AK Azad Chowdhury commented on the topic and cited from the Holy Quran regarding the subject. The Chair, Prof. Dr. Choudhury Mahmood Hasan talked about the subject mentioning the restrictions on drug addiction in the Holy Quran.

The Chair then appreciated Professor Kabir for his excellent presentation on a well-thought topic, which was very relevant to the present time. Prof. Dr. Liaquat Ali made some analysis of the study and appreciated it.

Secretary, BAS, Prof. Haseena Khan also made some important observations on the topic and expressed thanks to Professor Kabir for a good presentation and concluded the session.

Eid Reunion and Farewell program held on 26 April 2023

All Fellows and Associate Fellows of BAS were invited to an Eid Reunion on 26 April 2023 at 4:00 pm at the Bangladesh Academy of Sciences, 3rd floor, National Science and Technology Complex, Agargaon, Dhaka 1207. Emeritus Prof. Dr. AK Azad Chowdhury, President, BAS was the Chief Guest. Prof. Dr. Zahurul Karim, Vice President, BAS was the Chair, Prof. Dr. M Shamsher Ali, Fellow, BAS and Dr. MA Mazed, Director, BAS were on the dais. Prof. Dr. Haseena Khan, Secretary, BAS moderated the program. Fellows, Associate Fellows and BAS staff were present in the program.



Eid Reunion, 26 April 2023

It was a combined program to celebrate Eid reunion and to bid farewell to Dr M A Mazed, who served BAS as director for 17 years. President, BAS greeted everyone present and requested Prof. Haseena Khan, Secretary, BAS to start the event.

As this was also a farewell event for Dr. Mazed, the Secretary commented on how the BAS has become synonymous to Dr M A Mazed who has served the Academy very well and that during his time the BAS attained greater heights in terms of its activities. She then requested Prof Shamsher Ali to speak a few words about Dr. Mazed. Prof. Shamsher Ali briefly described the long history of the BAS and mentioned the participation and contribution of Dr. MA Mazed since his joining BAS in 2006. Then Major General (Rtd.) Prof. Dr. Matiur Rahman, Dr. M Idris Ali, Prof. Dr. Mesbahuddin Ahmed, Prof Dr. Liaquat Ali and Prof. Dr. Zahurul Karim spoke on the occasion and everybody acknowledged the amiable and cooperative nature of Dr. Mazed and the impact of the reunion in improving the connectivity among the fellows.



BAS bidding farewell to Dr. M A Mazed, Director, BAS

Everybody also praised and expressed their gratitude to the BAS Council particularly the Secretary, BAS Prof. Haseena Khan for her sincere efforts in expanding the activities of BAS. On behalf of the BAS personnel, Dr. Md. Samiul Haque, Additional Director addressed the august gathering and presented a brief biography of Dr. Mazed including his education, past positions, contributions and some of his social activities. Prof. Haseena Khan, Secretary, BAS then requested Dr. Mazed to share his feelings to the audience. Dr. Mazed formally addressed everyone, expressed his thanks and gratitude to all the fellows, and sought forgiveness for his inability to contribute more to the cause of the Academy. The moderator of the event, Prof. Haseena Khan then introduced Emeritus Scientist Dr. Firdausi Qadri who has recently been awarded the “Independence Award 2023”, the highest civilian award by the Government of Bangladesh. The Chief Guest Emeritus Prof. AK Azad Chowdhury, President, BAS congratulated her and presented her a floral bouquet for her enormous contribution to research and training. On this occasion Dr. Firdausi Qadri expressed her gratitude to the BAS and also praised the contribution of Dr. Mazed. The Chief Guest, Prof. AK Azad Chowdhury then congratulated Dr. Mazed with a floral bouquet and presented some mementos to him. Prof Chowdhury then delivered his concluding speech, highlighting the activities of BAS and the contribution of Dr. Mazed.

INTERNATIONAL EVENTS

AASSA-TUBA joint symposium on “The role of Science Academies towards the future of Basic Sciences”, Istanbul, Turkey, 28-29 April 2023

The Executive Board of AASSA, which was held in conjunction with the AASSA-TUBA joint symposium on “The role of Science Academies towards the future of Basic Sciences”, Istanbul, Turkey, 28-29 April 2023. Emeritus Prof. AK Azad Chowdhury, President, Bangladesh Academy of Sciences represented the Academy.



Prof. Dr. Muzaffer Şeker, President, Turkish Academy of Sciences (TÜBA) and Emeritus Prof. AK Azad Chowdhury, President, Bangladesh Academy of Sciences (BAS), Photo in Istanbul, Turkey.



Members on the EB meeting

BAS-USDA Endowment Program

BAS-USDA Project Monitoring

1. Dr. Nirmal Kumar Dutta, Chief Scientific Officer, Entomology Division, Bangladesh Agricultural Research Institute, Gazipur has been implementing the research project entitled “Development of mass rearing protocol of beneficial predatory mites and their field application to control harmful mites in vegetable crops” under 4th Phase of BAS-USDA Endowment Program. Prof. Dr. Mahbuba Jahan, Department of Entomology, BAU and Mr. Md. Mokshead Ali, Deputy Director, BAS-USDA Endowment Program monitored the project activities in Technical and Financial aspects on 10 January 2023. A Power Point presentation on the on-going activities of the project so far carried out was given by the PI Dr. Nirmal Kumar Dutta. The details of the project activities were explained elaborately by the project team.



Powerpoint presentation



Entomology Lab, BARI visited by the Monitoring Team

2. The activities of the project entitled “Safe and low cost Gur production from Date palm juice in Bangladesh” implemented by Prof. Dr. Md. Nazrul Islam, Department of Horticulture, Sher-e-Bangla Agricultural University (SAU), Sher-e-Bangla Nagar, Dhaka were monitored by Dr. M Idris Ali, Fellow, BAS and Member, TAC, BAS-USDA Endowment Program and Mr. Md. Mokshead Ali, Deputy Director (Program), BAS-USDA Endowment Program on 15 February 2023. The field visit was performed at Khajura, Jessore



Field visit at Khajura, Jashore

Project Fund Award Ceremony of the 5th Phase Projects

In the 5th Phase, more than 300 university teachers and scientists of different research institutes submitted their research project proposals to BAS. Finally, thirty projects in the field of Crop, Fisheries, Livestock, Health & Nutrition, Natural Resources, Economics and Marketing, Climate Change, System Research, Microbial Practices in Agriculture were finally approved. There were series of steps followed to finalize these thirty projects. The Project Fund Award Ceremony of the 5th phase projects was held in the Seminar Room of Bangladesh Academy of Sciences located at National Science and Technology Complex, Agargaon, Dhaka on 16 April 2023. Prof. Dr. Zahurul Karim, Fellow, BAS and Chairperson, TAC, BAS-USDA Endowment Program presided over the ceremony. Prof. AK Azad Chowdhury, President BAS was the Chief Guest.



Receiving cheque of the project



Project Fund Award Ceremony

Prof. Dr. A K Azad Chowdhury, President, BAS was present as the Chief Guest and Ms. Megan Francic, Agricultural Attaché, USDA, US Embassy in Bangladesh was present as the Special Guest.

The 79th Meeting of the Technical Advisory Committee (TAC)

The 79th meeting of TAC was held in the Meeting Room of the Academy, National Science and Technology Complex, Agargaon, Dhaka at 10:30 am on 18 April 2023. Prof. Dr. Zahurul Karim, Chairperson, TAC, BAS-USDA Endowment Program presided over the meeting. The meeting selected monitoring 30 approval projects.



TAC Meeting

Presentation and Discussion Meeting on Sustainable Ram Semen Production and AI in field Sheep through Technology Transfer

Prof. Dr. Farida Yeasmin Bari, Dept. of Surgery and Obstetrics, Faculty of Veterinary Science, Bangladesh Agricultural University has been implementing the project entitled “On-farm testing and scaling up Assisted Reproductive Technology (ARTs) in Sheep production through public-private partnership” under 4th phase. The Principal Investigator organized a Presentation and Discussion Meeting on “Sustainable Ram Semen Production and AI in field Sheep through Technology Transfer” in the **Conference Hall** of Department of Livestock Services, **Farmgate, Dhaka** on 31 January 2023.

The Presentation and Discussion Meeting was chaired by Prof. Dr. Zahurul Karim, Vice President, BAS and Chairperson, TAC, BAS-USDA Endowment Program. The Director General, DLS was present as the Chief Guest. The personnel of DLS administration, District Livestock Officers and Upazila Livestock Officers, In-charge of Local Government Sheep Farm; Director, Bangladesh National Zoo; Director, Local Government Poultry Farm, Sylhet; Friendship NGO Representatives; PI and Co-PI of the project, PhD students and Deputy Director (Program) DLS, BAS-USDA Endowment Program were the participants in the seminar. Prof. Dr. Farida Yeasmin Bari, the Keynote Speaker and PI of the project talked in details about the activities and achievements of protocol development on semen preservation, AI, and MOET

Technique in sheep through 6 years research on ARTs (BAS-USDA LS-11 and BAS-LS 02). The excellent achievements have been obtained by AI in the field sheep using produced chilled and frozen semen (estrus synchronization rates, pregnancy, lambing, lamb survival and growth rates) in selected Government and NGO Sheep Farm under the on-going project. Question & answer session was conducted. The Chair gave emphasis on transfer of the technologies to the DLS to be implemented with DLS project as soon as possible. Some recommendations on the ram semen production and AI technology transfer to DLS came out in the discussion meeting which are the following:

1. Development of DLS project for the sustainable ram and buck semen production and AI in the field sheep and goat;
2. Existing Govt. Sheep Farm and Laboratory (Bogura and Rajshahi) will be used under the project.
3. Nucleus flock will be developed as a resource for speeding up of quality sheep production speed up through AI technique.
4. Multiple Ovulation and Embryo Transfer (MOET) techniques will also be adapted besides AI in the field.
5. DLS projects will include NGOs for better performance of the work.
6. The resource persons of the Assisted Reproductive Technologies (ARTs) will serve as consultant of the AI and Multiple Ovulation and Embryo Transfer (MOET) work under the project.
7. The BAS-USDA, the donor of 9-year project work on reproductive performance, Ram semen preservation, AI and MOET works in sheep will be acknowledged during the transfer of technology to DLS.



Presentation and Discussion Meeting in Conference Hall of DLS, Farmgate, Dhaka

Editorial Committee

Dr. M A Hamid Miah, Editor
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