EDITORIAL

The National Education Policy 2020 (NEP 2020) is guided by the rich heritage of ancient and eternal Indian knowledge and thought. It recommends that knowledge of India which include knowledge from ancient India and its contributions to modern India and its successes and challenges should be reflected in the curriculum. It emphasises the promotion of Indian languages, arts, and culture. As such "All curriculum and pedagogy, from the Foundational Stage onwards, will be redesigned to be strongly rooted in the Indian and local context and ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, societal and scientific needs, indigenous and traditional ways of learning, etc." It envisages that such curriculum will also bring out in students the sense of rootedness and pride in India.

Keeping in view the above recommendations of the National Education Policy 2020, this special issue is being brought out. The articles included in the issue pertains to ancient Indian knowledge, contributions of Indian scientists, human resources for economic development of the country, etc., which are presented mostly by eminent personalities and scientists. The articles have been specially culled out from the issues of School Science which were published over the years, majority of which were published during the 1960s.

The paper, "Scientific Attitude and Development in Science and Technology" is an excerpt from the Jawaharlal Nehru Memorial Lecture delivered by Prof. J.V. Narlikar in New Delhi on 13 November, 1976 on the topic "The Role of Scientific Outlook in Development of Science and Technology" in which Prof. Narlikar emphasises upon the essence of the scientific process and approach.

Wheat is the main cereal crop grown in India, with India being the second largest producer of wheat in the world. The story of successful development of dwarf wheat in India underscores the significance of research and extension function with proper coordination. The article, "India's Success with Dwarf Wheats" by eminent scientist Dr. M.S. Swaminathan who is also known as the Father of Green Revolution of India highlights these aspects. The article takes us through a journey of how scientific wheat improvement took place in India leading to the development of wheat variety with greater yield and resistance to diseases.

The paper, "The Scientific Bases of Economic Development" by Dr. Prasanta Chandra Mahalanobis addresses the economic development of India as a newly independent country. The author highlights the critical role of investing into human resources for economic development of a country. It underscores the importance of applied and fundamental research in science, policy interventions and strategic investments in human capital to enhance productivity and foster economic development.

The article, "Early Achievements by Different Nations in Science" by Prof. Nil Ratan Dhar explores the early scientific achievements of different civilisations. It focuses on the contribution of Egyptian, Babylonian, Indus Valley, and Chinese cultures. Prof. Dhar examines the transmission of scientific knowledge through traditions and the influence of different cultures on the progress of science with special emphasis on the role of Arabic culture as a bridge between Eastern and Western scientific traditions along with the significant contributions of Indian and Chinese civilisations to mathematics, medicine, and technology.

In spite of their valuable contributions, some scientists do not receive the recognition that is due to them. In the paper, "Yellapragada Subbarow: Diseases were his enemies", Prof. K.V. Gopalakrishnan highlights the life and contributions of Dr. Yellapragada Subbarow, a pioneer in the field of modern medicine. In this article, the author takes us through the numerous hardships and academic setbacks faced by Subbarow during his early life and how he overcame those with determination. Prof. Gopalakrishnan alludes that Subbarow's story serves as an inspiration, bringing about the profound impact of medical advancements on human health and life expectancy. It also underscores the contribution of Indian scientists in the global history of medicine, which is often overlooked.

India has long been a land of fascination and attraction due to its "green gold" or the rich botanical heritage. In the article, "Plants that India Gave the World", an eminent botanist, Prof. Panchanan Maheshwari highlights several significant plants that originated in the Indo-Malayan region and spread globally—sugarcane, rice, cotton, tea, mango, banana and pepper. Prof. Maheshwari also discusses remarks about these plants in ancient texts and gives brief historical accounts of the discovery and spread of these plants to the world.

The article, "Our Units of Measurement" by an eminent theoretical physicist, Prof. R.K. Pathria, provides a comprehensive history about the use of different units of measurement. Prof. Pathria narrates the exciting and thrilling story of the adoption of different units of measurements. This four-part article covers different units of measurement–length, time, weight, luminosity, electricity and magnetism.

The 20th century marked significant advancements in space exploration, starting with the launch of the Russian spaceship, Vostok I in 1964. The paper, "Space Biology", by Prof. Sipra Guha explores the critical role that a biologist plays in making possible the space mission. Prof. Guha sheds light upon the nature of space and addresses the unique challenges posed by the space environment, such as altered gravitational forces, weightlessness, pressure, extremes of temperature as well as radiation hazards on a space traveller. It is envisaged that such details provided by the author will be thrilling to the readers, especially students.

The paper, "Gravitation - Relativity - Geometry" by Dr. Prahalad Chunnilal Vaidya explores the universality of the laws of physics by presenting the profound impact of Newton's law of universal gravitation and its foundational role in modern science and engineering. Dr. Vaidya also highlights the significance of Newtonian mechanics and the principle of relativity in our understanding of natural phenomena.

The determination of atomic weights is a cornerstone of scientific research crucial for understanding the chemical elements. It has undergone significant changes over the years. The article, "The Atomic Weights of Elements" by an eminent Indian chemist, Dr. Ram Charan Mehrotra highlights the significant developments in the area of determination of atomic weights of an element, with a focus on educating students and teachers. In this comprehensive review, Dr. Mehrotra also discusses the reliability of current atomic weight values, underscoring the need for continuous refinement, especially for those elements that have complex isotopic compositions.

The last article of the issue, though not the least, "India's contribution to Astronomy—Religious and Historical Background" by S.C. Chaterjee explores the historical background and developments in the field of astronomy in ancient India. The article also discusses how these advancements laid the groundwork for future research in astronomical studies and paved a more scientific approach to understanding the universe.

It may be noted that, in each article, a brief about the author, the abstract and keywords have been added for the benefit of the readers which were not part of the original articles.

We hope that this special issue will be invigorating and enriching to the readers and renew their pride in the immense contributions of India and Indians in the field of science.

As an organisation committed to improvement, we welcome your valuable suggestions. Happy reading and happy learning!