

location and the nature of the activity. Thus government offices may start at 10 a.m. in Central India, then they could begin at 9:30 a.m. in West Bengal and 9:00 a.m. in Arunachal Pradesh, where the sun rises nearly one hour earlier than in Central India. Similarly, in Gujarat, where the sun rises about one hour later, the timing could be set at 10:30 a.m. or even at 11 a.m. Since the same time would be applicable across the country, various airlines, the railways, and other agencies that operate with synchronized timings over the whole country and which often work 24 h a day, could continue their business as usual.

It is doubtful, however, that advancing the clock or shifting the business hours would actually lead to significant daylight energy saving. This is because these days almost all offices and business premises use artificial lights, provided that there is no load-shedding. In many cases, even electricity generators are pressed into action, when there is a power-cut. We have now entered the age of big departmental stores and malls, where bright dazzling lights continue to glow even when there is bright sunlight

outside. Even relatively small retail stores are no exception. A vast majority of people – if my observation is not wrong – lack the habit of switching-off lights in an office environment when these are not required. Admittedly, there would indeed be some energy saving, albeit very small, in terms of vehicular lights. This is because vehicles taking workers back home would not be required to switch on their lights, if offices are closed well before the onset of darkness.

The concept of multiple time zones serves a useful purpose in the case of those countries whose geographical expanse with respect to longitudinal measure is large. That leads to a discernibly large variation in sunrise (and sunset) times across the country. For example, in the case of Russia, a difference of about nine and a half hours exists between the sunrise times of the country's far eastern and far western regions. Thus when it is just early forenoon in the West, it is already late afternoon in the East. In such a situation, using a single clock-time in the whole of Russia would imply that a clock, set to correctly indicate a forenoon in the western part of the country, would

be unacceptable in the eastern part, where it would actually be an afternoon at that time of the day. Introducing time zones eases the situation. In our country, the time difference in daybreak in the far east and the far west is not large; it is less than 2 h. This does not warrant the introduction of time zones. In fact, time zones may simply cause confusion in our society, where there is large-scale illiteracy and people are not yet trained to look at things in a scientific manner. Introduction of time zones would further require a nation-wide movement to educate people about its concept. I suspect that even the Indian Railways would then find it hard to maintain a consistent timetable.

- 
1. Ahuja, D. K., Sen Gupta, D. P. and Agrawal, V. K., *Curr. Sci.*, 2007, **93**, 298–302.
- 

Y. P. JOSHI

B 45, Brij Enclave,  
P.O. Sundarpur,  
Varanasi 221 005, India  
e-mail: yp\_joshi@dataone.in

---

## Swami Vivekananda and the history of the Indian Institute of Science

Balaram<sup>1</sup>, in his editorial on 'The Birth of the Indian Institute of Science', has aptly described the association of Swami Vivekananda when the idea of founding the Indian Institute of Science (IISc) was initially proposed. In the renaissance of India, since the last decade of the 19th century, two great streams of thought can be seen to have played prominent parts: the spiritual stream under the influence of saints like Sri Ramakrishna and the Science and Technology stream under the patronage of leaders like J. N. Tata. That the two groups of people had occasions to meet and hold conversations and even have correspondence is a glorious and interesting part of this history. Balaram has quoted a number of refer-

ences on this history. A few more references are given at the end of this note<sup>2,3</sup>.

Balaram has also referred to the founding of the Indian Association for the Cultivation of Science in Kolkata in 1876 by Mahendralal Sircar. It is interesting to note that there was an intimate association between Sircar and the Guru of Swami Vivekananda, Sri Ramakrishna. This episode is recorded in great detail in the *Gospel of Sri Ramakrishna* by Mahendranath Gupta and published by Sri Ramakrishna Mutt, Chennai. Narendranath (premonastic name of Swami Vivekananda) was present during a few of the meetings between Sri Ramakrishna and Sircar.

- 
1. Balaram, P., *Curr. Sci.*, 2008, **94**, 5–6.
  2. Ghosh, S. P., *Swami Vivekananda's Economic Thought in Modern International Perspective: India as a Case Study*, The Ramakrishna Mission Institute of Culture, Kolkata, 2006, pp. 137; 174–179.
  3. *The Life of Swami Vivekananda by his Eastern and Western Disciples*, Advaita Ashrama, Calcutta, 1979, p. 397.
- 

V. PARAMASIVAM

Hindustan College of Engineering,  
Post Box No. 1,  
Rajiv Gandhi Road,  
Padur, Kelambakkam (via),  
Kancheepuram 603 103, India  
e-mail: deanpg@hindustancollege.com

---