Time in a Timeless Environment

My Life in a Bunker

L Geetha

The fact that every organism possesses an endogenous biological clock can be established when they are made to live in conditions of timelessness. How do human beings perform under such conditions? Human isolation facilities provide such timeless environments where human beings can live comfortably while performing various bodily activities as dictated by their endogenous clock. In this article, I narrate my personal experience in the isolation facility at Madurai Kamaraj University. My stay (on three occasions) has led to the important finding that the menstrual cycle in a human female is not coupled to the sleep-wake cycle. I also describe how such experiments can be useful in the context of shift-working, jet-lag and space studies.

A Bunker?

When you had to prepare for an exam or catch an early flight or train, you probably had the experience of getting up just before the alarm went off. This is possible because of the biological clock that we all possess. Just as we set our watches with standard times from the radio or TV, our body also sets its clock to a 24 hour schedule with the help of cues that are provided by the environment. For instance, the cycle bell of the milkman is sufficient for us to realise that the day has dawned, without even opening our eyes. Other factors such as light, temperature and noise can also provide us with information about time. Almost all physiological parameters in human beings are rhythmic, i.e. they repeat themselves at definite time intervals. For example, the time we go to sleep, the time we wake up, our body temperature, levels of sodium and potassium excretion, water excretion — virtually anything you can think of is rhythmic. All these rhythmic functions take place
because of the information of time received from the environment we live in.

What would happen if we are made to live in an environment which does not have time cues of any sort? What would happen if we lost track of time? How important is it to have the knowledge of time? All these interesting questions can be answered if we indeed have an environment that completely lacks time cues. In fact such environments have been created in five places in the world! Since these 'time less environments' have been created for conducting experiments on human beings they are called 'facilities'. All five such facilities in the world are rather similar, so let me describe the one in India. Believe me, I can describe it well — I have lived in this timeless facility for a total period of about 100 days (in three bouts)!

**Timelessness in the Bunker!**

The only isolation facility that we have in India is located in the Department of Animal Behaviour and Physiology, Madurai Kamaraj University (Figure 1). The others are located in USA, UK, Switzerland and Japan. The living quarter in the facility is a

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**Figure 1** Photograph exhibiting a view of the human isolation chamber.