Editorial

C S Yogananda, Associate Editor

Sagredo: *Indeed, I myself, being curious by nature, frequently visit this place* [ship building yard] *for the mere pleasure of observing the work of those who, on account of their superiority over other artisans, we call "first rank men." Conference with them has often helped me in the investigation of certain effects including not only those which are striking, but also those which are recondite and almost incredible. At times also I have been put to confusion and driven to despair of ever explaining something for which I could not account, but which my senses told me could not be true.*

– *Two New Sciences*
Galileo Galilei

This is how *Dialogues Concerning Two New Sciences*, the last work of Galileo and the first major work of modern science, (almost) begins. And that is how, I suppose, science education should begin: insatiable curiosity about the world around us and a keen sense of observation. Those who have watched builders and carpenters at work (better still, those who have tried their own hand!) will know how instructive such activities can be.

The purpose of the *Nature Watch* section is to induce our readers, especially the students, into observing the world around them. This issue features the concluding part of the article by Shankar and Shylaja on observing the night sky. Starting from this issue *Resonance* will feature a star chart on the inside back cover which we hope will help the readers get started on night sky observations. These charts will present a prominent part of the Indian night sky of that particular month. (The stars are represented as 'stars' rather than as discs which is usual as the 'starry' appearance is only an illusion. We did as that is how Galileo represented them in his monumental book, *The Starry Messenger*.) The team which is preparing the star charts would be happy to answer queries related to observing the night sky by the readers.

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Science does not live as much in the facts it accumulates as it does in its method. But, in schools/colleges, science education often gets equated to collecting a large number of facts. How does one 'learn science?' A very reasonable approach, to quote Stillman Drake, *is to study the writings of a man who was obliged to work out for himself, step by step, all the required procedures. Such a man was Galileo.*

Galileo is one of those rare individuals whose works can very eminently be read by all without any commentary. May be there is a strong case for including excerpts from his works in school science textbooks; given the literary quality of his writings perhaps even as part of language courses! (I give here the details of two of his books which were easy to procure:
(1) *Discoveries and Opinions of Galileo*, Translated with an Introduction and Notes by Stillman Drake, Anchor Books, New York (USD10.95) includes *The Starry Messenger* and *Notes on Sunspots*.
(2) *Dialogues Concerning Two New Sciences*, Galileo Galilei (Translated by Henry Crew and Alfonso de Salvio), Dover (USD 9.95) .)

At the time of Galileo there were no standard units of measurements or measuring devices; for instance there were no timing devices. It is remarkable that he often arrived at correct laws, for example the law of falling bodies, by devising and successfully performing experiments which involved making precise measurements. Vasant Natarajan (pp.44) traces the evolution of standards for weights and measures.

This issue carries the concluding parts of the articles, *Numeracy for Everyone* and *Electronic Commerce*. Thus it is time now to assemble the earlier pieces of these two articles and get an overall picture. After a two-part article on *Symmetry* in earlier issues (May and June 2001) we now have one on its breaking (pp. 32)!

Indian teams have done extremely well in the four international olympiads held so far this year. Turn to the last page to get a glimpse of the results.

We are very happy to announce the release of Resonance Internet Software Collection (RISC) for chemistry.