



Our Readers Write ...

The September 2011 issue of *Resonance* highlighting the life and work of R P Feynman has a very interesting article by Lawrence M Krauss (Hiding in the Mirror, Vol.16, No.9, pp.801–821, 2011) in which many developments in the development of weak interaction theory are recounted, in particular giving proper credit to E C G Sudarshan. There are however two points which it is desirable to correct, keeping in mind young readers of the journal:

1) Fermi developed his theory of the weak interactions in 1934. However he won the 1938 Physics Nobel Prize, not for this theory, but for his discovery that neutron irradiation could create radioactive elements, and for the effects of slow neutrons.

2) The Noether Theorem, stated and proved in the classical context in 1918, connects conservation laws with continuous symmetries for dynamical systems governed by Hamilton's Principle of stationary action. However, contrary to the statement on page 810, as space reflection is a discrete operation and not a continuous one, even when it is a symmetry it does not lead via Noether's Theorem to a conservation law. Indeed in classical physics there is no corresponding conservation law. However in quantum mechanics there is such a law, though not as a consequence of Noether's Theorem. This is carefully discussed in, for instance, the articles on Symmetries and Conservation Laws in Classical and Quantum Mechanics in the February and March 2011 issues of *Resonance*.

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