

---

## 50 YEARS OF CURRENT SCIENCE—GLEANINGS

---

### SCIENCE AND HUMANISM †

**S**PEAKING on the relations between science and human life in his Convocation Address to the Dacca University in 1932, Prof. Sir C.V. Raman observed that a false sense of values underlies the common belief that science derives its justification by its power to create wealth and new comforts and conveniences for humanity. But since science is equally capable of furnishing methods for the large-scale destruction of our civilisation, its true justification is to be sought in the marvellous success it has achieved in opening out a new vision of the universe, and more specifically in enabling man to perceive himself in proper relation to the universe he lives in.

In the course of a series of four lectures delivered at the Dublin Institute for Advanced Studies and published recently under the title "Science and Humanism", Professor Erwin Schrodinger has strongly emphasised the idealistic function of science and its spiritual bearing on life.\* Schrodinger observes that the practical achievements of science in the fields of technology, industry and engineering are more or less tending to obliterate its true import. Perhaps the fact that true scientific education is not much in evidence explains why a great majority of people seek to limit the goal of all scientific endeavour to just the improvement of our material conditions.

Schrodinger differs from the views of what he calls the "very scientific" circles, who make a virtue of the necessity for specialisation, and claim that the scope, aim and value of science is to be sharply distinguished from those of the other disciplines, such as art, philosophy and religion. In his opinion, the isolated knowledge obtained by a group of specialists within a narrow field has *in itself* no value whatsoever, but only in its synthesis with all the rest of knowledge, and only inasmuch as it really contributes in this synthesis towards answering the ultimate question: "Who are we?"

In the light of the fact that humanistic circles rarely, if ever, concede to science the right to answer the really important questions arising out of Life, the above pronouncement is indeed doubly welcome. Not only will the answer to the greatest of questions posed in the

foregoing be incomplete without the contribution from science, but it is also made clear that science cannot rise to its fullest stature, except by attempting to contribute its legitimate share in regard to every such question.

However, Schrodinger admits: "Not that we can avoid specialisation altogether: that is impossible if we want to get on". But he adds that all specialised research has real value only in the context of the integrated totality of knowledge. It is therefore gratifying to learn from him that the awareness that specialisation is not a virtue but an unavoidable evil is gaining ground, and that the voices are becoming fainter and fainter that accuse a man of dilettantism who dares to think and speak and write on topics that require more than the special field for which he is "licensed", or "qualified".

In this connection, it occurs to us that the counterpoise to specialisation is most effectively provided for by having more balanced courses in the Universities. As an example of what can be done in the beginning stages by our University lecturers, the following extracts from the report of the Commission for University Reform in Germany are worth quoting.

"Each lecturer in a technical University should possess the following abilities:

- (a) To see the limits of his subject-matter. In his teaching, to make the students aware of these limits, and to show them that beyond these limits forces come into play which are no longer entirely rational, but arise out of life and human society itself.
- (b) To show in every subject the way that leads beyond its own narrow confines to broader horizons of its own."

It is rounding off at the advanced research stage that raises great difficulties. It is obvious that for this to become fruitful at all, we need to have on the rolls of our Universities men distinguished no less for their catholicity and range of interests than for their scientific worth.

Let us hope that to some at least of our Universities it will be given to discover men who can with confidence preach and practise the following commandments of Schrodinger's: "Never lose sight of the role your particular subject has within the great performance of the tragic-comedy of human life; keep in touch with life—not so much with practical life as with the ideal background of life, which is ever so much more important, and keep life in touch with you."

---

\* The first lecture with this aspect; the other three contain a masterly review of the state of 'Physics in Our Time', particularly in relation to the principle of causality, the question of impossibility of continuous observation and the inadequacy of "models" in describing the ultimate structure of Nature (Cambridge University Press, 1951).

† Published in *Current Science*, 1952, Vol. 21, p. 61.