The last paragraph of the foregoing passage echoes remarks made by John Kendrew, the English student of the structure of whale myoglobin, when he accepted the Nobel prize in Stockholm in 1962.

This is only one of many pieces of evidence in the papers of the Shanghai and Peking groups that they are fully aware of Western thinking on protein structure and function—that is, of the broader significance of a technical feat of basic research such as the synthesis of insulin.

Thus, the Chinese work on insulin may be an important indication that the Chinese scientific effort, which was judged to be mostly one of quantity when it was reviewed at a AAAS symposium in New York in 1960, is achieving quality in a growing number of fields. —VICTOR K. MCELHENY

Bibliographical Note

The 18 articles in *Scientia Sinica Peking* mentioned in this report are as follows: Y. C. Du *et al.* **10**, 84 (1961); C. L. Tsou *et al.*, *ibid.*, p. 332; L. T. Ke *et al.*, *ibid.* **11**, 337 (1962); W. T. Huang *et al.*, *ibid.*, p. 499; C. I. Niu *et al.*, *ibid.* **12**, 327 (1963); Y. T. Kung *et al.*, *ibid.*, p. 1321; C. C. Chen *et al.*, *ibid.* **13**, 1235 (1964); Y. T. Kung *et al.*, *ibid.*, p. 1245; C. I. Niu *et al.*, *ibid.*, p. 1343; L. T. Ke *et al.*, *ibid.*, p. 1435; Y. Wang *et al.*, *ibid.*, p. 2030; Y. C. Du *et al.*, *ibid.* **14**, 230 (1965); Y. Wang *et al.*, *ibid.*, p. 1284; C. I. Niu *et al.*, *ibid.*, p. 1386; Y. T. Kung *et al.*, *ibid.*, p. 1710; ———, *ibid.* **15**, 221 (1966); C. I. Niu *et al.*, *ibid.*, p. 231; Y. T. Kung *et al.*, *ibid.*, p. 544.

Too Much Silence on the Potentials of Biology?

London. Two leaders in the popularization of science, one British and the other American, agreed here, on 22 May, that they are having difficulty getting biologists to speak out about dangers inherent in several important lines of current biological research.

Nigel Calder, editor of the London weekly *New Scientist,* and Denis Flanagan, editor of the *Scientific American,* spoke on the British Broadcasting Corporation television program "Horizon."

Calder mentioned research in which mammalian eggs are "manipulated," and the possibility that this work will lead to medical intervention to correct congenital malformations or even to enhance intelligence. He also noted the extensive studies that are being made on the chemistry of behavior. Flanagan, on the other hand, emphasized the potential of research on the chemistry of the gene, which could open up individual choice in such matters as the skin color or the intelligence of offspring (see V. R. Potter, *Science*, 20 November 1964, for a discussion of this question).

The editors agreed that these issues were as important as those raised by the development of nuclear weapons. "I hope it doesn't take a biological Hiroshima to get biologists talking," Calder said.

According to Calder, the scientific community in particular, and the man in the street as well, has a right to factual expositions which give "reasonable extrapolations" of the social and political effect of biological discoveries that are likely to be made. This is different from asking biologists to give advice or to make the actual choices, Calder emphasized.

Calder added that modern societies would have to get out of the habit of proceeding automatically with technical developments as they became feasible, but that such an attitude did not imply foreclosing lines of research. Both Calder and Flanagan said they felt all new knowledge, of itself, was good. "The question is what do you do with it," Calder said. "There is a rather hazy line between intervention to forestall obvious congenital malformations" and more general intervention to enhance the intelligence of all children, which could produce a dangerous imbalance in society between intelligence and emotion.

Flanagan said that the reluctance of biologists to go into cold print about the potentials of their work was partly explained by a healthy mistrust, in the scientific community, of too much speculation. But he agreed when interviewer Gordon Rattray Taylor remarked that biologists might someday face the kind of criticism now being leveled at nuclear physicists for not having resisted employment of their discoveries by the military.

Rattray Taylor had launched the discussion of social issues raised by biology by asking Calder, whose training was in science, and Flanagan, who studied the humanities, how their educations affected their work as science journalists.

Calder said that scientific training could be a disadvantage. A man could know too much to explain a subject well to people who know little about it. He and Flanagan said that the career of scientific journalist is so new that there is as yet no fixed educational pathway. Calder noted that about half the science journalists in Britain came from science, the other half from completely different fields. Editing a popular scientific journal, said Flanagan, involves standing at a gateway between scientific and literary educations, and "it doesn't matter much whether a scientist or nonscientist is the gatekeeper."

A popularizer of science today must move beyond the simple task of clear exposition, Calder asserted. He must pick out of the immense "background noise" of scientific publication "clear signals" that indicate important work.

Flanagan put it more confidently. He said there are a number of well-defined currents in the ocean of contemporary discoveries; the "hot topics" are pretty well defined, and that, according to Flanagan, is just the trouble. Too much attention can be given to particle physics or to nucleic acids.

A more pressing matter for the scientific journalist today, said Flanagan, is to be warned about subjects that have not yet given a clear signal, and to get scientists to discuss them. This problem is acute in biology.—V.K.McE.