

# reviews

THE value and dangers of drawing analogies between organism and societies have been debated at least since Herbert Spencer; part of their appeal is that they seem to provide a scientific language for talking about society and social organisation, which are prickly subjects of which scientists and doctors usually know little. Dr Salk is open and unashamed about it: "I believe in the usefulness of biological analogies in thinking about men." He calls it "a theoretical-experimental way of thought", to be distinguished from "a 'philosophical speculative way of thought' for dealing with questions in the human realm." He doesn't think much of philosophers, and we hear no more about them, not even those who have studied these problems through the ages. Instead he provides a long series of analogies. Racial intolerance may follow laws similar to immunological intolerance, and "then patterns of possible interest in psychological phenomena, could be observed through quantitative studies in immunology". The phenomena of enzyme induction are held to show something of the environmental forces that are needed to nurture and encourage the fulfilment of our potentialities. He takes the analogies very seriously, but can one really hope that they will, as he suggests, help in adjusting the relationships "between parent and child, teacher and student, lovers,

## Biology and man

J. Z. Young

*How Like an Angel: Biology and the Nature of Man.* By Jonas Salk. Planned and edited by Ruth Nanda Anshen. Pp. 118. (David and Charles: Newton Abbot, London and Vancouver, April 1975.) £3.50.

peers, or between groups or nations"?

The general aim of the book is to show that biological knowledge is increasingly relevant to human affairs, and though this is indeed true perhaps the continual stressing of analogies is not the best way to make the point. Those who actually have to manage social, educational and political affairs are not very likely to pay attention to such generalities, and will ask for more concrete examples. Dr Salk is continually emphasising that we "must" change our ways. "What is needed is a change of perspective . . . new values and new ethics are required . . . it will be necessary to establish patterns in the young child that will help him to develop to his fullest." He does not show any understanding that questions as to how these things can be done have occupied men for centuries and are at present being studied intensively.

Those who work in such fields may be annoyed to read that "a beginning must somehow be made". Perhaps more sociology for medical students might be a good start.

In view of Dr Salk's own contributions to infantile paralysis it is natural to look especially carefully at the social analogies he draws with this disease. He indeed believes that there is "a new form of crippling": Man's mind, which has "developed dinosaurian qualities (and) threatens to overpower his body", now apparently "faces uselessness". And our "socially and economically advantaged youths", because of their easy upbringing, are not immunised against this new disorder in the way that they have been immunised against polio. It is not clear whether the conclusion from this analogy is that we should inflict greater hardships upon children of the rich to immunise them against this disease.

It would be unfair to ridicule all of Salk's analogies. He is well up-to-date with studies of the development of the brain and its need for stimulation at appropriate stages of development. Not unexpectedly, he draws an analogy between learning and selective theories of antibody formation. But this is more than an analogy, and it is disappointing that he does not tell us about the evidence that the brain does actually begin with a library of possibilities from which selection is made. □

PROFESSOR LURIA has produced a very interesting book from the edited transcript of the general biology course he taught at MIT. Its theme is the central place of the genetic programme in biology. In my opinion he succeeds very well in presenting his material (primarily on cell biology) in a logical self-sustaining and interesting manner. Although he provides references to other books he accommodates within his own the essential argument and examples. There are concise appendices on chemical topics such as kinetics, free energy and the structures of biological molecules, and other appendices on discussion topics and examination questions.

The first part of the book (four lecture-chapters) introduces the characteristics of living matter and gives a good account of the cellular components. The section on biochemistry

(nine lectures) proceeds from enzymes through energetics and the generation of ATP to the biosynthesis of amino acids, nucleic acids and proteins, but not of carbohydrates and lipids. That on genetics (eight lectures) starts with

*Lectures in Biology.* By S. E. Luria. Pp. xvii+439. (MIT Press: Cambridge, Massachusetts, and London, 1975.) n.p.

Mendel, and deals, in order, with cell cycles and life cycles, bacterial and phage genetics, eukaryotic genetics (almost entirely *Drosophila* and Man) and population genetics and evolution. An excellent feature here, and indeed throughout the book, is the way in which Luria demonstrates the value of particular systems in illuminating particular problems without making his treatment seem fragmented. Thus, in the section on developmental biology

(seven lectures) bacterial sporulation, slime moulds, plant gametogenesis and meristems, insects, sponges, *Hydra*, snails, *Amphioxus*, chickens and mice are all used as illustrations. The entry into the discussion of (vertebrate) physiology (eight lectures) is through hormones; there are then chapters on muscle, blood and ionic balance, immunity and neurobiology.

Given the area covered, it is not surprising that the treatment is dogmatic, and that the amount of attention given to how actual experiments were done (and who did them) is generally scant. This is an excellent book for those seeking an exposition of how living systems function. It will be particularly valuable for the more junior university student, physical scientists in search of biology and teachers of biology wanting to keep abreast of cell biology. **Paul Broda**