

BOOK REVIEWS

NEW CONCEPTS FOR OLD

Science, Folklore and Philosophy

By Harry Girvetz, George Geiger, Harold Hantz and Bertram Morris. Pp. xi + 547. (London and New York: Harper and Row, Publishers, 1966.) 72s.

THE authors of this volume seem to have run up against a common difficulty for teachers of philosophy, that of justifying to their pupils the seemingly abstract and recondite studies included in the philosophy curricula. Why study methodology, why do conceptual analysis? And in particular why read Aristotle on substance, or Locke on qualities, or Austin on performative utterances? In this book there seems to me to be exactly the right answer. It is that the growth of science has thrown up, from time to time, new ranges of phenomena which have required new concepts and systems of concepts for their understanding. The system with which the discoverers were equipped (called by the authors the "folklore") broke down in the face of the new situation and a new system was painfully forged to accommodate it. They see philosophy as the activity of forging (by critical analysis) new conceptual schemes. Their answer then to their pupils and to all who cannot see the point of philosophical studies is that philosophical issues have had to be resolved in each of the great periods of conceptual change initiated by scientific advance (or *vice versa* of course) and that the resolutions that were made by the Greeks, by the British empiricists and Descartes, by the post-Darwinians, and which are being made these days in the philosophy of mind and of behaviour, have created the system of concepts which we now use. In short, to understand our present science we operate with a system of concepts and methods of reasoning forged in the past and carelessly acquired in the present. We should understand the reasons why we have adopted in our culture the intellectual machinery that we have.

The project is quite admirable in my view and the plan of the book excellent. It is distressing then to have to say that the detailed execution of the plan leaves a great deal to be desired. There are a great many historical errors, some minor, for example that "Tycho's view [of the structure of the solar system] was too clumsy to be entertained", when that very view was not only entertained by some of the first mathematicians of Europe, such as Ursus, but was the most widely taught in the first half of the seventeenth century. There are also major errors. The most remarkable of these is the contention that science and religion parted in about 1600, their divorce being pronounced by Francis Bacon. The authors can have had very little conception of the attitude to Nature of the circle of Boyle, Locke and Newton. Indeed there is a general failure to get the historical settings quite right. Nevertheless the book has great value in showing, even in a rather unsatisfactory way, how the great philosophical problems were generated, and the place of their resolutions in our conceptual scheme.

R. HARRÉ

AN INSPIRED EXPERIMENTER

Collected Papers of P. L. Kapitza

Edited and with an introduction by D. ter Haar. Vol. 1: 1916-1934. Pp. xvi + 503 + 31 plates. 140s. net. Vol. 2: 1938-1964. Pp. viii + 505-993. 140s. net. (London and New York: Pergamon Press, Ltd., 1964-65.)

THE collection of papers under review makes fascinating reading: I have found browsing through them an enjoy-

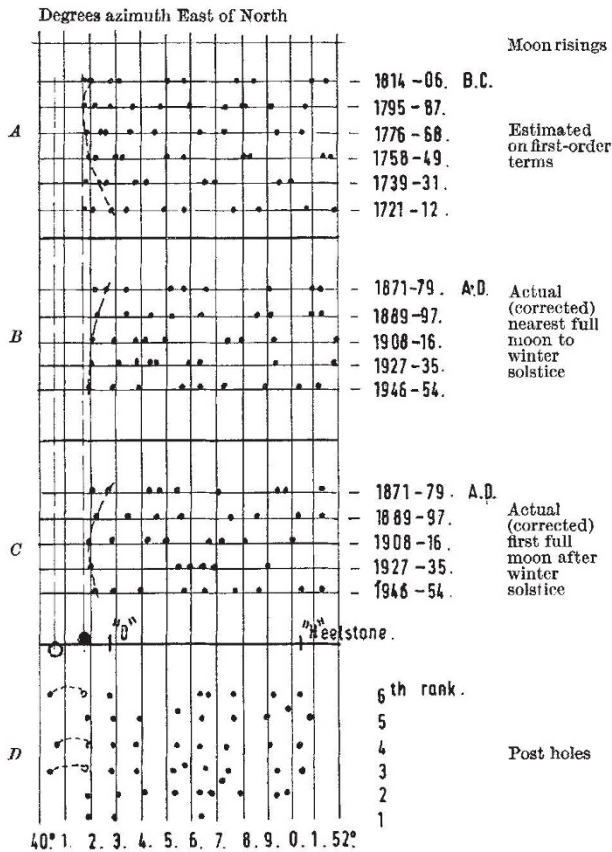


Fig. 2. Comparable azimuth bearings of winter full-moon risings. (Full-orb tangent to horizon) and post hole alignments

Group 'A': Six cycles of moonrisings based on first-order terms as supplied by Hawkins for period 1814-1712 B.C.

Group 'B': Similar to 'A' but the "Moons" correspond to the known rising position covering the period A.D. 1871-1954 after correction to allow for the change in the angle to the ecliptic of the Earth-Moon system over the past 3,800 years

Group 'C': Basically similar to 'B', but here it applies to the first full-moon after the winter solstice

Group 'D': Depicts the post holes arranged according to their azimuth bearings

The data connected by broken lines are all separated by a period of 6,940 days or exactly 19 years within a few hours, and differ from other similar Moons in that their rising positions are practically the same. The broken lines in group 'D' merely indicate the position the three holes would occupy if they were aligned on full orb. The two larger circles immediately above represent the most northerly position of first gleam and full orb of moonrise. The positions of stone 'D' and the heelstone are indicated on the same line

accepted explanations of some salient features. Until new evidence is found pointing to the contrary, it is more logical to conclude:

(a) That the small stone (No. 11) in the sarsen circle was intentional, and that the circle represented the 29.5 days of the lunar month.

(b) The double circle or spiral² of the 'Y' and 'Z' holes represented the 59 days of two lunar months. The strong possibility that there were fifty-nine blue stones inside the sarsen circle would provide a more suitable means of representing the same thing.

(c) The 19-year phase or metonic cycle was represented by the nineteen blue stones inside the trilithon "horse shoe".

All things considered, including other similar post holes, there seems little doubt that Stonehenge, in its early stages, was a kind of "observatory". It provided a suitable site wherein systematic observations of 'Soluna' (Sun and Moon) phenomena were carried out by these neolithic peoples.

¹ Hawkins, G. S., *Nature*, 200, 306 (1963); 202, 1258 (1964).

² Sale, J. L., *The Secrets of Stonehenge* (private publication, 1965).