replication of an experiment (for example). Other work has explored, most interestingly, the way in which scientific disputes are conducted, and the way in which all kinds of political resources and non-scientific opinion can be used.

The final part of the book deals with the exchanges between science and other aspects of culture. This includes the use which may be made of theoretical perspectives or forms of explanation available in general thought. Unfortunately there is little discussion of the conditions under which these will be drawn on.

This whole undertaking is relatively new in sociology, and one cannot yet say what it will yield. My own view is that there are more new philosophies of science than Mulkay implies and that there will gradually emerge many attempts at quite different sociologies of scientific knowledge. Certainly the work which has been done so far is interesting, and could give sceptical scientists pause for thought. The book is likely to be of interest mainly to those who have already read into the field of sociology of science. **Stuart S. Blume**

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Mysterious Solar System

Mysterious Universe: A Handbook of Astronomical Anomalies. By W.R. Corliss. Pp. 710. (The Sourcebook Project: P.O. Box 107G, Glen Arm, Maryland 21057, 1979.) $15.95; £8.

MYSTERIES fascinate me and this book contains an abundance. It is a classical "What done it?" — the inanimate scientific relation to the "Who done it?" William R. Corliss has scoured a host of scientific journals for reports of astronomical oddities and has assembled over 500 short articles and extracts, on a multitude of subjects ranging from aurorae in comet tails to zodiacal light-rifts and black and white holes to X-ray bursts.

It is strong meat. Taken at one go the unceasing succession of anomalies, unknowns, mysteries and strange sightings leave the reader mentally punch drunk. You will stagger from the chair to the window to reassure yourself that the Sun and planets and bright stars are still where you thought they should be and have not all capriciously shuffled themselves. But in short bursts the book is a joy and the reader's mind is continually accelerated away in pursuit of ideas and possibilities that may account for the strange events being described.

The timespan covered by the book is reasonably broad, the most up-to-date extracts coming from mid-1978. Approaching from antiquity the number of articles verses time curve increases sharply around the middle of the 19th century, a time which seems to be governed more by the birth of journals such as *Nature* and *Scientific American* than by a sudden onset of mysterious happenings or human curiosity. Our excitement over the 'recent' discovery of the rings of Uranus pales somewhat when we read that Challis and Lassell reported an observation of a ring in 1847. These gentlemen also observed a ring around Neptune.

And things disappear in astronomy too. Vulcan the supposed intra-Mercurial planet sprang into prominence in 1876 only to fizzle from view in the early 1900s. Corliss collects together 14 papers on this subject. We are also introduced to Neith the lost satellite of Venus. The eighteenth-century observations of this object remain enigmatic and simply accumulate distain as they become eroded by time. We can easily smile condescendingly and talk about 'ghosts' in ancient telescope eye pieces but maybe...

Any collection of articles has the character of the collector strongly imprinted on it. This I'm sure cannot be avoided. Corliss shows a strong bias towards the Solar System. For example, the Moon, meteors and meteorites take up 26% of the book, the same amount of space as all the stars, the Sun, galaxies and cosmology put together. A similar percentage is taken up by the planets, leaving the zodiacal light, comets, planetary regularities and the environs of planet Earth to absorb the remainder.

I would be happier if the title of the book was *Mysterious Solar System*. Failing this, there are an enormous number of mysterious star types, stellar origin and evolution problems, interstellar, galactic and intergalactic matter and composition anomalies that could have been expanded to give the book a more 'universal' balance.

However, as a sourcebook of a lot of strange Solar System happenings and a number of stellar and galactic ones, the book is to be highly recommended. It has been well produced, extremely well indexed and is excellent value for money.

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Simple classical vibrator

The Physics of Vibration. By A. B. Pippard. Vol. 1. (Cambridge University Press: Cambridge, London, New York and Melbourne, 1978.) £22.50.

THIS is the first volume, devoted to the simple classical vibrator, of a work on the physics of vibration. It is designed to bridge the gap between undergraduate textbooks on the subject and specialist treatises. It ranges widely, discussing not only the obvious examples from mechanics, elementary electronics and acoustics, but also nuclear magnetic resonance, cyclotron resonance and Josephson junctions. The subsequent volume or volumes will deal with specifically quantal pheonomena and with vibrations of complex systems.

There is an introductory chapter describing very clearly the scope of this work; a chapter on the free vibrator; two chapters on applications of complex variables and on Fourier methods; three chapters on spectrum analysis, on the driven harmonic vibrator, and on waves and resonators; then one on volocity dependent forces groups, together with various examples such as whirling, the gyro-pendulum, nuclear magnetic resonance, cyclotron resonance and helicons. This chapter somewhat breaks the flow of the rest of the book, and does not fit in very happily; I am not convinced that this level of treatment of magnetic resonance will be helpful either to the expert or to the inexpert. A chapter on the driven anharmonic vibrator discusses subharmonics and stability. There is a short chapter on parametric excitation and a chapter on maintained oscillators. The final chapter is on coupled vibrators, and includes the Huygens phenomenon, frequency-locking and superconducting weak links.

Although the majority of examples are taken from electric circuit theory and mechanical oscillators, there are many others, some quite intriguing. The level of discussion is what one would expect from a good experimental physicist. The main interest in in common patterns of behaviour rather than in the details of operation, yet the details are worked out for many special cases.

I think that is primarily a book for the teacher rather than for the student. It does not treat any one subject in sufficient detail to be a useful source for someone who really wants to understand it, but it is more detailed than most students who want a general impression of the subject would want. It is, however, full of valuable new insights and analogies which should be helpful to anyone who needs to teach this sort of material. No physics library should be without a copy.

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