

Monitoring a nuclear test-ban treaty

Monitoring Underground Nuclear Explosions. By Ola Dahlman and Hans Israelson. Pp. 440. (Elsevier: Amsterdam, Oxford and New York, 1977.) \$49; Dfl. 120.

DAHLMAN and Israelson have attempted to summarise the technical aspects of monitoring a comprehensive nuclear test-ban treaty, on a level that will be understandable to politicians and laymen, as well as to technical experts. The authors are seismologists who work for the Swedish government, which directs a large research program on nuclear monitoring and which has apparently encouraged them to produce this volume. This is a welcome effort, because technical disagreements in this area have often obstructed progress in arms-control negotiations.

The technical material in the book is drawn mainly from seismology, with small sections on nuclear explosion physics and on non-seismological means of identifying explosions. In addition, short non-technical sections review the history and current status of disarmament negotiations and discuss the political requirements for the monitoring of a comprehensive test-ban treaty (international data exchange and the like). Appendices give the texts of existing treaties related to nuclear explosions and list all known or presumed nuclear explosions that have occurred since 1963.

Non-technically oriented readers may find the book too long (355 pages of text) and too detailed for easy assimilation, largely because of the authors' attempt to impartially and exhaustively treat all aspects of the subject. A more selective approach would probably have been more useful to the non-specialist. The reports of the Stockholm International Peace Research Institute (*Seismic Methods for Monitoring Underground Explosions*, 1968, and 1971 *Progress Report*), which, though several years old, are not seriously obsolete, or Bolt's recent book (*Nuclear Explosions and Earthquakes*, Freeman, 1976) better serve the needs of laymen. Technically oriented readers, on the other hand, may find the book's detail useful. Virtually all relevant recent seismological studies are discussed, on a non-technical level. For those desiring more specific details, the extensive 26-page bibliography can guide them to the original sources, many of which are not in the open literature.

The book would be more useful if it avoided speculation in areas far re-

moved from seismology. For example, on p41 it states that "... we therefore think that it is unrealistic to imagine that one single person can build such a bomb" (referring to terrorists). On p338 the authors "express the strong feeling that nuclear weapons could be designed to maintain their long-term reliability without testing." On p340: "The 'military significance' of a test would generally increase with the yield of the explosion." On p50: "A series of tests is probably required to develop a militarily significant nuclear-weapon system." On p47, it is stated that typical test yields have decreased because of increases in delivery-system accuracy. These are all plausible guesses, but

Physiological basis of sexual behaviour

Biological Determinants of Sexual Behaviour. Edited by J. B. Hutchison. Pp. 822. (Wiley: New York, San Francisco and London, 1978.) £19; \$37.

IN recent years, research into the physiological basis of sexual behaviour has advanced rapidly. This review volume therefore appears at a most opportune time and should particularly interest behavioural endocrinologists. Most of the chapters deal with well established laboratory species, especially rodents, and only a few authors, such as Kelley, Pfaff and Keverne, attempt to make their reviews truly comparative. However, this is partly a reflection of current knowledge, and is not intended as a criticism of the book.

The first of four parts deals with developmental processes, covering genetic and experiential factors as well as the influence of hormones on sexual differentiation of the brain. Part 2 is the outstanding section, comprising eleven chapters on various aspects of the neuroendocrine control of behaviour in adult vertebrates. All the chapters are well written and blend together successfully, despite a certain degree of overlap and repetition in some cases. For instance, much of the evidence concerning the "aromatization hypothesis" or the control of the lordosis response is repeated in several chapters. The effects of androgens on the hypothalamic regulation of sexual behaviour in males are discussed by Hutchinson, with particular reference to his extensive work on doves. Spinal mechanisms also make an important contribution to the patterning of masculine sexual behaviour, and Hart provides excellent coverage of this subject. The remaining chapters deal in the main with

only weapon designers know for sure. Such speculation lessens the book's authority.

It is unfortunate that such an expensive book has not been more carefully edited; virtually every paragraph suffers from defects of grammar or style (which do not, however, seriously affect the book's intelligibility).

All in all, the authors have produced a useful book, although they have probably fallen short of their ambitious goal of satisfying a highly varied audience.

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hormones and sexual behaviour in female rodents, rhesus monkeys and humans. A crucial point referred to by some authors, and in particular by Herbert, is that gonadal hormones may exert their central effects on sexual behaviour by influencing monoamine neurotransmission. Meyerson and Malmnas provide a superb review of the psychopharmacological evidence, and Everitt describes a neuroanatomical approach to the study of monoamines, which promises to produce some important advances in future.

The conceptual framework and methods of measurement used in studies of sexual behaviour have changed considerably over the years and this improvement is likely to continue. Part 3 attempts to deal with these topics but it is disappointing. The two chapters are unequal to the task and do not enhance the more physiologically based reviews in parts 1 and 2. This section could, with advantage, have been much longer.

The final portion of the book is concerned with sociosexual behaviour. The individual contributions are excellent and cover a wide range of subjects including evolutionary constraints on patterns of sexual behaviour, the role played by olfactory and tactile stimuli, and mechanisms of "pair bonding" in avian species and of gender identity in humans. The authors in this section use widely differing writing styles but this does not detract from enjoyment of the material.

This is a very fine book indeed. Research workers should find it useful as it represents the most up-to-date review available on the physiological control of sexual behaviour.

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