by manipulating both the daily pattern of ingestion and the volume ingested. The technique appears useful when it is desirable to control fluid ingestion in normal satiated rats.

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References and Notes

1. This paper reports research supported in part by a grant from the National Science Foundation. We wish to thank William H. Morse of the Harvard University department of psychology for his advice and generosity in allowing the use of several pieces of control equipment.
2. B. F. Skinner, *The Behavior of Organisms* (Appleton-Century, New York, 1938).
3. C. B. Ferster and B. F. Skinner, *Schedules of Reinforcement* (Appleton-Century-Crofts, New York, in press).
4. E. Stellar and J. H. Hill, *J. Comp. Physiol. Psychol.* 45, 96 (1952).
5. M. Sidman, *ibid.* 46, 253 (1953).
6. The liquid diet is composed of 250 ml of evaporated milk, 125 ml of 50-percent sucrose solution, 150 ml of whole egg, 30 ml of Kaopectate, and 0.3 ml of Multi-Vi Drops (White Laboratories, Inc., Kenilworth, N.J.).

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Book Reviews

Statistical Mechanics, Principles and Selected Applications. Terrell L. Hill. McGraw-Hill, New York, 1956. 432 pp. Illus. $9.

It is always a very pleasant occasion when somebody who has made significant contributions to a field of physics can be persuaded to write a monograph on his field of interest, and the present monograph is no exception to the rule that usually such a monograph provides a welcome addition to the literature on the subject in question. The author discusses relatively briefly in the first three chapters the principles of statistical mechanics and the relation between statistical mechanics and thermodynamics. The fourth chapter deals with fluctuations. The fifth chapter treats the theory of imperfect gases and condensation, following largely Mayer's theory but giving also some new, alternative, derivations and discussing in the final section Yang and Lee's theory. The sixth chapter is devoted to a discussion of distribution functions and the liquid state. Chapter 7 deals with nearest neighbor lattice statistics, while the last chapter discusses lattice theories of the liquid and solid states. In a number of appendixes, the author gives some mathematical details. There is an adequate index at the back.

Although the author states that he hopes this monograph may be useful as a textbook for either an advanced course in statistical mechanics or as a supplement to a textbook such as Rushbrooke's in a more elementary course, I feel that the discussion is too technical for use as a textbook and that the main users of this monograph will be people working in the field who want to check up on the various methods that have been used in solving the problems discussed. For this purpose the monograph is an excellent one, and the discussion is very thorough.

I have a few minor criticisms, as one is always bound to have with any book. The reference to μ-space on page 92 is not really general in that it only refers to particles without internal degrees of freedom. The discussion of the third law of thermodynamics in section 14 is, to my mind, inadequate and does not pay sufficient attention to the clarification of the role of the third law which was given by Simon. Finally, I cannot feel that any useful purpose has been served by giving in 15 pages a bird's-eye view of quantum mechanics. Those readers who are familiar with quantum mechanics will know all that is contained in this section, but those who do not know sufficient quantum mechanics to use this monograph with any profit would certainly not be able to learn sufficient quantum mechanics from such a brief exposé. However, I would like to emphasize once again that these criticisms are only minor ones and that the over-all picture given by this book is a very pleasant one.

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Fundamental Concepts of Higher Algebra. A. Adrian Albert. University of Chicago Press, Chicago, Ill., 1956. 165 pp. $6.50.

For the greater part of his new book, A. A. Albert reworks the same ground treated in the first nine chapters of his *Modern Higher Algebra,* written nearly 20 years earlier. However, in the present volume his presentation leads up to a discussion of finite fields, whereas the former volume closed with an account of p-adic number fields.

The first chapter presents the elementary theory of finite groups; the second discusses rings, fields, and some basic concepts of ideals; and the third covers vector spaces and matrices. Chapter IV is devoted to finite algebraic extensions of a field and to Galois theory in the modern treatment. The fifth and final chapter applies the methods of the previous chapter in a systematic study of the irreducible polynomials over a finite field. A concluding section of Chapter V lists about 20 theorems of L. E. Dickson on finite fields, without giving proofs.

Although most of the book reviews the fundamentals of modern algebra, there is more here than a simple repetition of old material. The selection and arrangement are expertly done, and new proofs are produced for a number of theorems to improve the unity and logical structure of the presentation.

Unfortunately, the virtues of the book are likely to be appreciated only by the specialist. Albert's style at its softest makes few concessions to the reader, and in this case, as the author notes in his preface, "the presentation is extremely compact, and requires slow and careful classroom discussion," if it is to be used as a textbook for a first course in modern alegbra. A rather liberal sprinkling of typographic errors will add to the student's troubles.

A single example will show how compact the discussion is. The proof of Fermat's theorem (that when p is prime and does not divide a, $a^{p-1}-$ is divisible by p) consists of the observation that the nonzero residue classes modulo p form a group of order p-1 under multiplication, together with a reference to the theorem that the order of a group is divisible by the order of any subgroup. Few authors would consider it superfluous to suggest at least that the subgroup to use is the one consisting of the powers of the residue class containing a.

It is too bad that the difficulties of style will limit the number of readers who might otherwise appreciate the brilliant qualities of this book. Mathematics could use more writers like G. H. Hardy.

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