lines of N 30 W. In the area west and northwest of Lake Okeechobee the lagoons and probably sand ridges were arranged along lines of N 45 W. Southwest and west of Miami the lines were arranged in broad sweeping curves convexed toward the east, approximating the curve of the Florida Keys.

The impression produced was very striking. The probable explanation is that this arrangement is due to currents, or currents and winds acting together during Pleistocene time, when all of this portion of Florida was covered by shallow sea.

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THE USE OF THE TERMS POLYGAMY, POLYGYNY AND POLYANDRY

THE term polygamy is frequently used as a synonym of polygyny in zoological writings. Polygamy, however, is an inclusive term, referring to the custom of having more than one mate, and includes both polygyny and polyandry. Since there is a definite meaning and a need for each of the three terms, it seems most desirable to stop the degradation of meaning and use the terms as defined in Webster's New International Dictionary, 1935:

Polygamy. The custom or practice of having a plurality of wives or husbands at the same time.

Polygyny. The mating of one male with several females, in certain animals, as fur seals.

Polyandry. The possession by a woman of more than one husband or mate at the same time.

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SCIENTIFIC BOOKS

STATISTICAL MECHANICS

The Principle of Statistical Mechanics. By RICHARD C. TOLMAN. Oxford University Press, 1939.

THIS new book of Tolman will be welcomed by every one interested in the fascinating field of statistical mechanics. Since an earlier book by Professor Tolman on the same subject, in the reviewer's opinion, remains one of the best introductory texts, one knew what to expect. The new book, however, far from being in any way a new edition of the older work, has a completely different character. Its purpose is to elucidate in detail the principles of the subject, especially in so far as they have been influenced by the development of the quantum mechanics. Except in the book of Von Neumann (which lies beyond the mathematical horizon of most physicists), this task had never been attempted. And this attempt alone makes it an important and useful book. In fact, it seems a pity that Tolman has not restricted himself to this sole task. In addition his book contains a straightforward text of the quantum mechanics (Chapter VII) and a discussion of the usual kind of applications (in Chapters X and XIV). These sections could have been omitted without loss to the main argument. They are quite satisfactory in themselves, but they are addressed, so to speak, to a different audience from that of the rest of the book.

The main part of the book may very well be compared with the famous article by P. and T. Ehrenfest in the "Enzyclopädie der Mathematischen Wissenschaften." There the principles of statistical mechanics were analyzed on the basis of the classical mechanics. Ehrenfest was able to show that many additional assumptions had to be made in order to explain the second law of thermodynamics. The clarity of his exposition has had a strong influence on the further development of the subject. And before going any further it may be said that Tolman's book reaches the same high standard of lucid and careful exposition. The two treatments of course exhibit several differences. The most important one is the difference in attitude with regard to the work of Gibbs. Ehrenfest has always held the opinion that Gibbs had only simplified and systematized the ideas of Boltzmann. Tolman, on the other hand, considers the Gibbsean concept of the canonical (and grand-canonical) ensemble as absolutely fundamental. He of course admits that for its justification one has to make certain assumptions, but he considers these as inherent to any kind of statistical approach. Furthermore, he tries to show that essentially the *same* assumption (the hypothesis of equal *a priori* probalities) has to be made in the classical as in the quantum statistics. The close analogies which exist between these two fields are very striking indeed. Tolman has emphasized these analogies by making the part of the book devoted to the classical statistics (Chapters III till VI) completely parallel to the part dealing with the quantum statistics (Chapters IX till XII). Even the wording is sometimes almost the same. Both parts culminate in the discussion of the H-theorem, which is thus given the central position it deserves.

All this surely is very illuminating. However, the reviewer must admit that the analysis of Tolman has not quite convinced him of the validity of the Gibbsean point of view, although as an old pupil of Ehrenfest, he may perhaps be prejudiced.

Since this is not the place for a detailed discussion, the reviewer will try to express in general terms his