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**Pimentel G C & McClellan A L.** *The hydrogen bond.*
San Francisco: W.H. Freeman, 1960. 475 p.
[University of California, Berkeley, and California Research Corporation, Richmond, CA]

**The Hydrogen Bond presents the state of knowledge (ca. 1959) about this chemical interaction. The book reviews the implications for physical, thermodynamic, spectroscopic, solution, dielectric, and kinetic behaviors and tabulates crystalline and biological structures strongly influenced by hydrogen bonding. It contains a comprehensive, annotated bibliography with 2,241 entries. [The SCI® indicates that this book has been cited in over 3,340 publications since 1961.]**

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"By 1950 it was generally recognized that the special bonding situation called 'the hydrogen bond' was one of the most important interactions in chemistry. This is because water is such a dominant substance in our planetary environment and because the properties of water are so completely determined by this relatively weak bonding interaction. Plainly the freezing point and boiling point of water determine the range of ambient conditions found on Earth. Through its vapor pressure and heat of vaporization, water provides the working fluid for the heat engine that drives our weather. All of these properties are essentially fixed by the hydrogen bond interaction between water molecules. Even more important, life on Earth evolved in this aqueous environment. This led to the perhaps inevitable result that hydrogen bond interactions are influential in a myriad of ways in the chemistry of life, the most obvious being the hydrogen bonded structures involved in protein structures, DNA, and the replication mechanisms of reproduction.

"As a result, the literature on hydrogen bonding began to grow at an exponential pace in the post-World War II period. Conducting research on hydrogen bonding, we began to realize how difficult it was to ascertain what was already in this burgeoning literature. Consequently, about 1955, we decided to try to summarize the state of knowledge about the hydrogen bond in all its aspects and to provide an annotated and comprehensive bibliography to that date. This proved to be a far greater task than contemplated, partly because there was more important work in the pre-World War II period than was generally realized, but mainly because the literature was growing so rapidly during the writing period that it was difficult to bring this summary to closure. We obtained a sacrificial set of *Chemical Abstracts* dating back to 1900 so that we could read and transfer to index cards the abstracts of over 3,500 articles. Between us, we read or perused an authoritative summary of every physical and chemical behavior affected by hydrogen bonding. The work was culminated by compilation of the annotated bibliography containing some 2,241 key references.

"Undoubtedly the importance of this reference, as manifested in its citation frequency, stems from its utility in providing entry to a large literature on a topic of crucial importance to many scientific disciplines. In 1958, with strong insistence from our wives, we finally agreed that the book could only be finished by selecting an arbitrary cutoff date beyond which we would have to ignore new developments. At that time we predicted that the growth of the subject would never again permit a complete survey by a limited set of authors in a single volume. This has proved to be so, as evidenced by the fact that the next comprehensive review, edited by Schuster, Zundel, and Sandorfy[1] in 1976, occupies three volumes. Its 29 chapters are authored by teams involving 36 authors, they fill 1,425 pages, and their combined author index includes over 5,000 names."

1. **Schuster P, Zundel G & Sandorfy C, eds.** *The hydrogen bond.* Amsterdam: North-Holland, 1976. 3 vols.