

such changes may be secondary effects of humoral changes; the fact that humoral changes are ultimately cellular in nature is never mentioned. This section on general concepts is concluded with an overly long chapter by the editor on the nature of aging. Although the chapters in the section are generally of first quality, one wonders about their arrangement. For example, the chapter by Cutler could very well have been the opening chapter for part 1 and might have been followed by the related contributions of Sacher and Sohol. Conspicuous by its absence is a chapter dealing with the fundamental nature of cell aging and the relation between aging, differentiation, and the life-span of cells in vivo and in vitro.

The second section of part 1, dealing with the fidelity of information flow, contains two excellent chapters on mutation frequencies and DNA repair by Hart and Trosko. These chapters set forth the nature and types of DNA repair as well as the role of mutagenesis in aging. The authors speculate broadly (and bravely) on the relation between DNA repair, mutagenesis, carcinogenesis, and aging.

The last two chapters of part 1 and the first three of part 2 deal exclusively with evidence bearing on the notion that aging is caused by errors. The authors discuss evidence for and against error theories, drawing on models as varied as human cell cultures and mosquitoes. These chapters are followed by ones that review the literature on ultrastructural changes with age and the relationship between the life-span of fibroblasts in vitro and the age of the donor from which they were derived. Two chapters on transcription, one on enzyme changes, and one on cell renewal and cell loss during aging complete the volume. Here again it is difficult to fathom what the editor perceives the relationship between chapters to be.

Overall, the chapters are somewhat uneven both in length (ranging from 6 to 51 pages) and in conceptual development. Some are straightforward literature reviews while others are reports of research. Both volumes contain many typographical errors. The lack of a clear rationale for the selection and arrangement of chapters suggests the lack of a coherent body of knowledge. In that sense, the editor has missed his mark. On the other hand, most of the current information and central topics in biological aging research are to be found in these two volumes.

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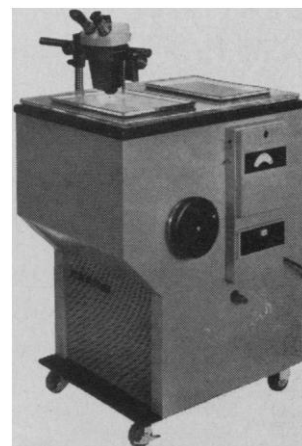
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