finding is consistent with the interpretation that they have passed one or perhaps even two glacial phases in the refugium. Lindroth found that a significant number of the Carabidae are represented by short-winged (flightless) populations; and he argues, as in previous studies, that this is a sign of a long-established fauna, since nonflying forms would not be able readily to extend their range. Such possible survivors, however, are few in number. Kodiak at present is well forested in parts, and livestock are raised; it corresponds mainly to Merriam's Hudsonian life-zone. More than nine-tenths of the flora and fauna are widespread species of a merely boreal type, which could not have persisted in the refugium but have evidently immigrated in postglacial times from ice-free Beringia or from the south. They testify rather to the ease of recolonization over great areas of land and even across sea channels of moderate width. The interpretation of the flightless Carabidae seems, to this reviewer, to remain doubtful; so many species of these beetles are polymorphic in wing development, and flightlessness is so frequent in arctic and alpine insects, that populations consisting entirely of flightless individuals may perhaps evolve readily when conditions warrant. Certainly, moreover, the Kodiak refugium, with its arctic conditions and limited biota, does little to clarify the hypothesis of coastal refugia supporting plants and insects of Hudsonian and Canadian type in glacial times, put forward by some authors to explain the present-day biota of Iceland and Greenland. On the whole, therefore, the book is interesting but a little disappointing; the conclusions are less decisive and less far-reaching than might have been hoped.

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Purines and Pyrimidines

Antagonists and Nucleic Acids. M. EARL BALIS. With a chapter by George B. Brown. North-Holland, Amsterdam; Interscience (Wiley), New York, 1968. xii + 294 pp., illus. $16.95. Frontiers of Biology, vol. 10.

In this volume Balis broadly reviews the synthesis of purines and pyrimidines, transcription and replication, and inhibitors of various types. In each of the chapters, information is presented from both a chemical and a biochemical point of view on inhibitors and antagonists of various reactions of nucleic acid synthesis, so that each chapter provides a summary of both synthetic and blocking reactions. Interconversions of purines and pyrimidines, subjects on which Balis has firsthand experimental information, are reviewed in considerable detail. Briefer reviews are presented of transcription and replication, the incorporation of analogs into nucleic acids, and the mechanisms of action by alkylating agents and inhibitors of protein synthesis. A novel feature of this book is the chapter written by Brown on purine-*N*-oxides, which he has actively studied. At present it would appear that these are of greater interest as carcinogens than as therapeutic agents. The bibliographies are interesting but not exhaustive.

This volume is an up-to-date account of an interesting aspect of biochemistry, and the material is presented so that it is readily comprehensible both to graduate students and to more advanced researchers.

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Physiological Controls

Physiology and Pathology of Adaptation Mechanisms. Neural, Neuroendocrine, Humoral. EÖRS BAJUSZ *et al.* Pergamon, New York, 1969. xvi + 584 pp., illus. $20. International Series of Monographs in Pure and Applied Biology: Modern Trends in Physiological Sciences, vol. 27.

This book is another collection of contributed chapters on a theme. In this case, the editor is Eörs Bajusz and the theme is adaptation to the environment. Sections of the book deal with neuroendocrine and metabolic regulatory processes, the regulation of pituitary-adrenal function, the regulation of the secretion of other pituitary hormones, adaptation to environmental temperature, and some examples of the regulation of other vegetative processes such as sleep. Thus, one can argue that the book, although valuable, fails to live up to its title; there is a good deal of physiology but very little pathology, and consideration is limited largely to those adaptation mechanisms that are neuroendocrine. The quality of the contributions and their makeup varies. A number of contributors use their chapters to report previously unpublished experimental data. For example, there are useful data and interesting hypotheses advanced in the chapters by Florsheim and by Slusher and Hyde. Other chapters are comprehensive reviews; one particularly complete and analytic review is that of Beyer and Mena on the control of lactation. The chapter by Norman on the cerebrospinal fluid as a possible transmitter mechanism is short and incomplete, but does raise some interesting questions. It is particularly pertinent in view of the current controversy about whether implants of glucocorticoids in the brain act locally to inhibit ACTH secretion or whether the dissolved steroids are transmitted via the cerebrospinal fluid to the median eminence and thence via the portal vessels to the pituitary.

The most recent original articles cited in many of the chapters are dated 1964 or 1965 and the foreword is dated 1966, yet the book was published in 1969. It seems to me that the speeding up of publication of reviews needs special attention, particularly in new fields in which concepts change and new data appear as rapidly as they do in modern neuroendocrinology. However, the present book will still be of interest, particularly as a source book, to those who are concerned with regulatory mechanisms and environmental physiology.

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Chemistry of Aging

Aging Life Processes. SEYMOUR BAKERMAN, Ed. Thomas, Springfield, Ill., 1969. xiv + 190 pp., illus. $9.75. American Lecture Series No. 729.

Bakerman and five contributors offer a competent, if superficial, review of the accomplishments of chemists interested in aging. More consideration of the relation of the chemical data to those of physiology and morphology would have enhanced the volume's readability, but much of the relevant chemical literature is reviewed. After a sketchy discussion of mostly nonchemical parameters, aging changes in nucleic acids and proteins are discussed, but with no mention of data from Hydén's laboratory showing age-