Upon reading this book, however, one gets the impression that there is no plausible alternative to the gene activation model of growth control.

The criticisms notwithstanding, the book is an extremely worthwhile source of data on many important aspects of mammalian cell growth, particularly those having to do with macromolecular synthesis. It neatly disposes of some (but not all) of the most popular myths about the control of growth. It is, therefore, recommended, with the proviso that it be taken along with a healthy dose of skepticism and a subscription to a current journal of cell physiology.

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Myrmecology

Ant Larvae. Review and Synthesis. GEORGE C. WHEELER and JEANETTE WHEELER. Entomological Society of Washington, Washington, D.C., 1976. vi, 108 pp., illus. Paper, $11. Memoirs of the Entomological Society of Washington, No. 7.

Ant larvae, glimpsed when a nest is exposed by the turning of a stone, appear to be little more than helpless white lumps. A closer examination will reveal that they are anatomically complex and capable of no small amount of behavior. Recent research has shown that those belonging to at least some species provide secretions important to the welfare of the adults.

For nearly 50 years George C. Wheeler, later assisted by Jeanette Wheeler, conducted close studies of the external anatomy of ant larvae. In all, the Wheelers were able to examine 182 genera, representing all of the 10 living subfamilies and 47 of the 60 tribes. In this summary of a life's work they have integrated numerous previously published articles into an account that places the study of ant larvae on a solid foundation. Many species are beautifully illustrated with line drawings, and keys are provided to the level of genus.

As in the past, the authors are modest and cautious in their conclusions. They have redefined the limits of some genera and shifted the phylogenetic assignments of a few others. They make no attempt, however, to draw broader evolutionary conclusions. It is their view that the data of larval anatomy are only part of the total evidence needed for stable taxonomic conclusions, and they have left the final synthesis to others. In fact, William L. Brown has already made extensive use of the larval data in his important continuing revision of the ant genera of the world.

The Wheelers' synthesis has set the stage for another kind of study. The larvae of many ant species bristle with strangely shaped tubercles and hairs; those of the Leptanillinae have a remarkably complex, wedge-shaped organ that extends from the prothoracic venter toward the lower surface of the head. There also exists extreme variation among species in body form, flexibility of the thoracic region, and shape of the mouthparts. The significance of almost none of this is known, because research has been directed almost entirely toward anatomy, to the neglect of ecology and behavior. When studies are concentrated on these topics, taking advantage of the excellent anatomical information now available, we can expect to gain considerably in our understanding of the evolution of the ants.

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Atomic Physics

The Physics of Electronic and Atomic Collisions. Papers from a conference, Seattle, July 1975. JOHN S. RISLEY and R. GEBALLE, Eds. University of Washington Press, Seattle, 1976. xiv, 902 pp., illus. $40.

Electron and Photon Interactions with Atoms. Festschrift for Professor Ugo Fano. Papers from a symposium, Stirling, Scotland, July 1974. H. KLEINPOPPEN and M. R. C. MCDOWELL, Eds. Plenum, New York, 1976. xviii, 682 pp., illus. $45. Physics of Atoms and Molecules.

Every two years an International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC) is held. The conferences usually include a number of invited lectures reviewing progress that has been made in the field. There were 58 such lectures at the most recent (ninth) ICPEAC, and they are published in *The Physics of Electronic and Atomic Collisions*. (Abstracts of the 566 contribued papers are published in two other volumes under the title *Electronic and Atomic Collisions*; University of Washington Press, $40.) The lectures are generally authoritative and are well written, but at a level that demands a considerable familiarity with the subject matter.

The volume begins with five reviews of special topics. Harrie Massey writes about negative ions and positrons (mostly positrons), Ugo Fano discusses his recent work on electron correlations, and Rudolf Peierls gives a short theoretical description of decaying states. Ernest Henley surveys possible experiments to detect the coherent parity-violating effects in atoms that would result from the existence of neutral weak currents. Eric Herbst and William Klemperer describe ion-molecule reaction schemes for the formation of interstellar molecules. The remaining articles are collected into 13 sections, each dealing with a particular area of research.

The experimental progress reported in the book has generally been in the development of higher energy and angular resolutions of incident and scattered electron and atomic beams, in the use of coincidence techniques for simultaneous detection of electrons and photons, in the production of polarized electrons, and in the use of lasers, both as sources of intense coherent radiation for use in photoabsorption studies and for the production of excited atoms for use in collision experiments.

Measurements of elastic and inelastic scattering of electrons by neutral atoms, which have traditionally occupied the central role in these conferences, continue to be important, and with the increasing sophistication in experimental techniques, they now provide deeper insight into the detailed nature of the interactions between electrons and atoms. Photon interactions were also discussed at the conference, and reports were presented on absorption of synchrotron radiation, photodetachment of negative ions, photodissociation of positive molecular ions, and multiphoton processes.

Electron and photon interactions with atoms were also the topic of a symposium held in honor of Ugo Fano, whose theoretical studies during the past 40 years have had a major, enduring impact on theoretical and experimental research in atomic and molecular physics. *Electron and Photon Interactions with Atoms*, the proceedings of that conference, contains 57 contributions, both theoretical and experimental. The papers are mostly straightforward reports of current work on electron and photon interactions, emphasizing research on angular distributions, correlations, and orientation and alignment effects. The collection is a testimony to the versatility of Fano's research; almost every paper makes reference to his work. There is considerable overlap, both in subject