I cannot recommend this book for the ordinary newsstand buyer of science fiction who wants merely an hour's fast-paced escape reading and cares nought about the genre from the literary or historical point of view. He would find some of these tales, exhumed from bound volumes of century-old magazines, pretty hard going. On the other hand, the serious reader, the collector, and the student of literature will find it a worthy addition to his library.

L. SPRAGUE DE CAMP
278 Hathorpe Lane,
Villanova, Pennsylvania

Imitative or Innovative?

New Universities in the Modern World (Macmillan, London; St. Martin's Press, New York, 1966. 200 pp., $5), edited by Murray G. Ross, is concerned with ten new universities that range geographically from India and Pakistan to Australia, Nigeria, England, and North America. Three of Great Britain's new seven are included, and two from the United States—the University of South Florida and the University of California at Riverside. The authors of the various chapters in this most useful book are presidents and vice chancellors who have played key roles in planning, building, staffing, organizing, and operating these new institutions.

One naturally expects this volume to be enspiriting and provocative—a chronicle of far-sighted planning to meet the educational needs of a new age. Such is not the case. The new universities have generally trailed after rather than led the social forces that called them into being. Breathlessness rather than prophetic foresight seems to be the climate of their birth.

The universities were often forced to develop much faster than their original plans envisaged. East Anglia opened earlier than planned; at the University of York eight colleges opened a year early in 1963 instead of 1964. And, says the president of York University, "if we were to start again, I think most of us at York would ask for more time, more staff, more money." Nowhere throughout the volume is there any indication that educational and social leaders in England were even aware of the population explosion, the impact of which could have been foreseen 15 to 18 years earlier. Only pressure from the surrounding society pried open the narrow doors to higher learning. In the United States projections were made as early as 1946 by President Truman's Commission on Higher Education. Because the problem was not imminent, few gave the report serious attention. The case histories in this volume provide ample evidence that societies throughout the world wait for the time of crisis to act.

Even more dispiriting than the lack of forward planning is the unenterprising character that most of the new universities adopted once they did get off the ground. "Pressures of time forced on the University a structure that, by and large, is rather conventional," writes the vice chancellor of Monash University.

At the University of California at Riverside, the designers of the curriculum were hedged about by certain traditional university practices characteristic of higher education in the United States. Even in East Pakistan University the pattern of the administration's structure was similar "to that found in other British Commonwealth Universities."

As far as methods of instruction are concerned, these new universities might just as well have been established in the medieval period, or even in the third century when the rabbis prescribed in the *Talmud* the fixed teacher-pupil ratio. No means of communication other than by word of mouth in a small group is even recognized.

Nowhere in these "new" universities, for example, can one find any reference to the use of television for instruction, language laboratories, work-study programs, thoroughgoing curriculum revision, or other modern procedures rather thoroughly tried by older universities.

Can it be that the new universities are so much concerned with being recognized by the old that they become imitative and not innovative? Are the old new and the new old? As far as the accounts in this book are concerned, the new universities merely represent "old wine in new bottles." What a pity! Student populations are skyrocketing; not enough able faculty members are available to maintain quality in higher education; and exciting new resources and aids to learning are available. Perhaps what is needed now is a truly *new* new university, sponsored by an *old* university that can lay the groundwork for higher education in the 21st century.

ALVIN C. EURICH
Aspen Institute for Humanistic Studies, Aspen, Colorado

The Freud-Abraham Correspondence

For historians this volume of correspondence, **A Psycho-Analytic Dialogue: The Letters of Sigmund Freud and Karl Abraham, 1907–1926** (Basic Books, New York, 1965. 423 pp., $7.50), edited by Hilda C. Abraham and Ernst L. Freud, between the founder of psychoanalysis and one of his ardent disciples, may be of some interest; *l'affaire* Jung and other political problems of the early psychoanalytic movement are candidly discussed in their letters. For psychoanalysts the volume will undoubtedly provide a basis for still more speculation on the alleged deep libidinal relation between Freud and his disciples: thus, in the introduction, one finds Edward Glover speaking of the transference and counter-transference relationship between Freud and Abraham.

However, for those interested in the scientific status of psychoanalysis this volume can only be a disappointment. Neither Freud nor Abraham ever questions the basic assumptions so implicit in the correspondence: (i) that psychoanalytic clinical evidence is reliable; (ii) that psychoanalytic theory is capable of empirical tests; (iii) that psychoanalytic therapy is better than no therapy at all. But, of course, there is now good experimental evidence which suggests that psychoanalytic clinical evidence may be unreliable; there is good reason to suppose that psychoanalytic theory is not capable of empirical tests; and there is no positive evidence which indicates that psychoanalytic therapy is better than no therapy at all. Thus the claim on the dust cover that this volume gives "a close-up of a science in the making" is hardly justified.

What we do see primarily in this close-up of a "science" in the making —once political and personal matters are put aside—is Freud congratulating Abraham and Abraham congratulating

Freud on their published papers and books. Unfortunately, such mutual backslapping does not make a science. As Karl Popper has pointed out in *The Logic of Scientific Discovery*, another publication of Basic Books, the essence of scientific inquiry is the free criticism of existing theories and the replacement of them by better theories in the light of the criticism. This spirit of scientific criticism is absent from the correspondence of Freud and Abraham.

MICHAEL MARTIN
Department of Philosophy,
Boston University

History of Genetics

It takes an unusual person to write a really good history of any branch of science. Professor A. H. Sturtevant, the author of **A History of Genetics** (Harper and Row, New York, 1965. 165 pp., $5.50), is indeed such a person. He has been an active and creative geneticist for more than half a century, and has known personally most of those who have worked significantly in modern genetics in the period from the rediscovery and confirmation of Gregor Mendel's work in 1900 to the end of the 50-year time span covered by his book.

The extent of his firsthand knowledge is illustrated by the highly informative "intellectual pedigrees" he has constructed, a fascinating way of showing who trained (or otherwise influenced) whom in this relatively new branch of biology. Among the more than a hundred included geneticists—and cytologists who contributed directly to genetics—I believe Sturtevant knew all but perhaps two or three. In addition, he at one time or another worked in the same department or institution with nearly half of them.

The fact that Gregor Mendel's name does not appear in any one of these intellectual pedigrees dramatically illustrates the well-known fact that Mendel was indeed a solitary scholar. As a geneticist, he had neither intellectual ancestors nor intellectual descendants in the sense of continuing personal communication. Had he had either, his amazing work would no doubt have been appreciated decades earlier.

In his characteristically direct, clear, and succinct way, Sturtevant successively summarizes genetic knowledge before Mendel, Mendel's own contribution, the "rediscovery" of Mendel's work a third of a century after its publication, and the rapid additions to knowledge and understanding made during the subsequent half century of genetics.

The chapter on the rediscovery is of special interest because of the author's painstaking collection of known facts and his careful appraisal of their significance. Take, for example, the three papers that de Vries published in 1900. It seems clear that the first to appear in print, in which de Vries did not refer to Mendel, was actually submitted for publication later than the paper in which he *did* refer to Mendel. Why was Mendel mentioned in one paper but not in the other? We do know that in 1954 T. D. Stomps reported correspondence indicating that de Vries received a reprint of Mendel's paper from Beijerinck in 1900, just as he was about to publish his own first papers. We also know that both Tschermak and Correns were deeply concerned that de Vries did not refer to Mendel in the paper that he read before the Paris Academy of Sciences. Stomps gives a possible explanation; namely, that the academy paper was merely a summary of the more complete paper published in Germany. Even so, apparent inconsistencies remain and one wonders why Mendel's work was not cited.

Whatever the facts may be—and, no doubt, unanswered questions will always remain—Sturtevant documents well the unusual circumstances surrounding the virtually simultaneous and independent recognition of the significance of Mendel's work by de Vries, Correns, and Tschermak. Of the three, Sturtevant points out, it is probable that only Correns independently rediscovered Mendel's principles.

Old-timers in genetics and newcomers alike will thank Professor Sturtevant for conserving in book form his unique knowledge of the history of one of the most significant developments in 20th-century biology. In addition, newcomers will find that the book is a beautifully concise summary of the substance of classical genetics. In this respect, it is made even more valuable by a carefully selected three-page chronology of significant genetic discoveries and interpretations.

G. W. BEADLE
University of Chicago

Forest Soils Conference

Forest-Soil Relationships in North America (Oregon State University Press, Corvallis, 1965. 532 pp., $8), edited by Chester T. Youngberg, covers a wide range of subject matter in a rapidly expanding field that is of great importance for the future of forestry in North America. It contains the papers presented at the Second North American Forest Soils Conference, which was held at Corvallis, Oregon, in August 1963.

The volume is evidence of the gradual coming of age of forest-soil research on this continent. Essentially, only in the far north and west do we still depend largely on virgin, unmanaged forests for our wood products. Here as elsewhere, forest-soils investigations serve as a major foundation stone, increasingly essential for the building of a sound silviculture. Many of the 35 papers presented represent fundamental investigations made by professional soil scientists; others were contributed by foresters who have turned their interest and talents toward the application of their knowledge of forest soils in forest management. Most of the important general research that is under way is covered, but forest-soil survey methods and soil-site productivity evaluations are especially well represented.

However, it is evident that only a beginning has been made. Many contributions are well illustrated with appropriate photographs and charts and are provided with usually apt graphs and tables. It is difficult to select particular papers for mention, but those that deal with nutrient cycling, nitrogen accretion in ecosystems, and the clonal concept in site relations are among the more stimulating.

The usefulness of combining the study of soils and vegetation is evident throughout. Geographically, the papers reflect the location of the conference. Fifteen represent work done in the Pacific States, five are reports from the South, and four are from Canada. Unfortunately, Mexico is not represented. Although the majority of the authors are associated with governmental institutions or universities, one industrial forestry organization is very well represented. It is hoped that more private companies will report at the next conference.

The editor has assembled a most useful volume. The book is well and