Book Reviews

The Incas of Pedro Cieza de León. Translated by Harriet de Onis. Victor Wolfgang von Hagen, Ed. University of Oklahoma Press, Norman, 1959. lxxx + 394 pp. Illus. $5.95.

In 1535 a 13-year-old Spanish boy, from Llerena in Estremadura, sailed from Seville to Cartagena. There he joined one of the armies of exploration and conquest that were being formed and set off into the interior. Fifteen years later he emerged at Lima, Peru, as a mature soldier preparing to return to his homeland. His journeys and trials had not brought him great wealth, but the things he saw and reflected upon during all this time were chronicled in a manuscript that he took back to Spain with him. This man was Pedro Cieza de León, one of the great soldier-historians of the Spanish conquest of the New World, a man who ranks along with Bernal Diaz del Castillo in his ability to relate an event with straightforwardness more vivid than the purplest prose.

Between 1535 and 1550 Cieza had served with such men as Robledo, Belalcázar, and La Gasca. He had seen the Cauca Valley and the Quimbaya Indians. He entered Quito when the memories of Atahuallpa were still alive. And he had been on the plain at Xaquixahuana when La Gasca broke the forces of Gonzalo Pizarro to end Peru's bloody civil wars in 1548. Commissioned as an official historian by La Gasca, Cieza spent the next two years traveling through Peru and Bolivia making a systematic inquiry into Inca history and culture. This, in brief, was the experience detailed in eight books of which only the first had been published when Cieza died in 1554.

Cieza was a man with strong humanist leanings, and his writings revealed his concern over the European mistreatment of the Indians. Because of the critical nature of his comments on this subject, his plans for the publication of the remainder of his work ran afoul of the Inquisition. His manuscript was, in effect, impounded in the archives of the Council of the Indies where, except for some pirating and plagiarizing late in the 16th century, it was forgotten. A bad translation of a part of his first book was published in English in 1709, but it remained for W. H. Prescott to "rediscover" Cieza when he drew upon this remarkable source for his *Conquest of Peru*. Later, Sir Clements Markham published the whole of the first two books in English; and there have been subsequent Spanish editions and other English translations of both the first two books and of sections of other books.

The present Onis-Von Hagen edition utilizes those parts of books 1 and 2 which deal with Cieza's travels in the domain of the Inca between 1547 and 1550. The original chapters have been rearranged, however, so that they follow the traveler on his journey from north to south. Other chapters have also been assembled to form a kind of Inca ethnography and history. In each case the chapters are labeled to show their original provenience and position in the Cieza volumes. The whole has been put together with a long introduction by Von Hagen, and interlaced through the book are a series of 32 excellent half-tones illustrating the landscape and archeological monuments which Cieza saw and described. This is a very effective presentation, and it serves to give the work a great popular appeal without in the least detracting from its scholarly qualities.

The De Onis translation is the finest in English, and I think there is little doubt that this rendering of Cieza de León is the best all-round presentation of both the man and his writings which has yet appeared in print. Von Hagen shows great perceptiveness, imagination, and feeling in his creation of the historical contexts, both immediate and on the larger scale of 16th-century world politics.

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The Relation of Fungi to Human Affairs. William D. Gray. Holt, New York, 1959. xiii + 510 pp. Illus. $8.50.

This is a textbook designed for a somewhat unusual type of course which might be called "economic mycology"—a specialized branch of "economic botany." This may seem, to the outsider, to be rather too much concentration on too limited a subject, but in this one will soon agree with the author that, in fact, the subject is far greater than can possibly be contained in 510 pages. Gray, however, does an excellent job of making a clear and well-organized summary of the field. He begins with a brief description of the morphology and classification of the fungi, and then divides the major portion of the book into two sections: the "Beneficial activities of fungi," and "Harmful activities of fungi." Let me just list the topics covered, for the magnitude of the activities of fungi are indeed impressive. Under the beneficial activities we find the destruction of organic wastes; mycorhizae; fungi as food and their role in food processing (especially cheese); fungi in medicine (especially antibiotics, but many other topics as well); alcohol fermentation; the syntheses of gallic, citric, gluconic, itaconic, and kojic acids, as well as various enzymes, glycerol, and fats; the use of fungi in bioassays; and then a fair group of miscellaneous activities. Among the harmful aspects we find plant diseases, timber and paper destruction, tropical deterioration of materials and objects, food spoilage, and medical mycology (allergies, mycoses, and mushroom poisoning).

The material presented in the summary of each of these subjects is well chosen to give an effective picture. Furthermore, it is a modern picture for the author has taken pains to bring the topics discussed up-to-date. If the reader wishes to pursue any of these large topics further, there is a well selected bibliography at the end of each chapter.

It should be reemphasized that this is a textbook and not a literary essay, such as, for instance, John Ramsbottom's *Mushrooms and Toadstools*. In fact, the two books, both excellent in their own way, are at opposite poles (and there are others that lie somewhere in between). Ramsbottom's style is lively and witty, while Gray's is wholly unobtrusive. Ramsbottom concentrates on a few topics of special interest, while Gray gives a balanced and well-rounded

picture of the whole field. It would be fitting, in a course of "economic mycology," that Gray's book should be used as a text and Ramsbottom's as collateral reading.

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The Cell. Biochemistry, physiology, morphology. vol. 1. Jean Brachet and Alfred E. Mirsky, Eds. Academic Press, New York, 1959. xxi + 816 pp. Illus. $22.

This is the first of a series of three books which will cover most of cell biology in some 40 articles written by well-known workers in the field. This volume is in two parts, the first on methods, the second on general problems. The remaining two volumes will deal with cell constituents and specialized cells. Every biological library should, and no doubt will, buy the series, but its price puts it beyond the means of the individual biologist. The production is excellent and up to the high standards of the publishers. The indexing is good and so are the illustrations (except for the absence of figure captions in Ebert's article).

The best part of this volume is the section on general problems. There is an excellent article by Grobstein on the difficult field of cell differentiation. It is an intractable field at the moment, but it is still the central problem in cell biology. Briggs and King give a good review of the interactions of nucleus and cytoplasm in eggs and embryos and include a summary of their own important work. It is a pity that it could not have been extended to cover recent research with micro-organisms. Ebert gives a clear and critical account of the immunological approach to biological specificity. This is a rapidly developing subject and one of great interest to all biologists, but at the moment the approach is at the level of tissues and whole organisms and has not yet come down to the level of the cell. There are also articles on fertilization, sex determination, radiation effects, and plant cell growth and differentiation (which shows the wide gap between plant and animal cell biologists).

The section on methods is too short to be really useful. The articles cover a wide field and cannot be much more than summaries of the available methods—Wyckoff on optical methods, Gersh on fixation and staining, Glick on microchemical techniques, and White on tissue culture. The best reviews are those which cover a narrower field—Allfrey on cell fractionation, and Walker and Richards on microscopical methods for measuring single cells. In view of the fact that the same publishers are producing a series of books on general cytochemical methods, I doubt whether this section is really necessary.

I must admit that I experience a slight sinking feeling when handling this book: 800 pages are a weight both for mind and hands. Surely it would have been better to split this into half-a-dozen or so smaller books: For the authors, this would mean greater personal responsibility and, more freedom for individual views. For the editors, less pressure to collect contributions by a given date. For the readers, ease of handling, less mental indigestion, and the possibility of buying some of the books. For the librarian, the fact that six books can be read by six different people at the same time. At its price, it is hard to believe that this book would cost much more if it were so divided.

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Soviet Reviews of Nuclear Science. On the 40th anniversary of the October Revolution. Pergamon Press, New York, 1959. 110 pp. Illus. $5.

This slim volume was first published in the U.S.S.R. in November 1957 as a special number of the journal *Atomnaya Energiya* in celebration of the 40th anniversary of the Soviet Revolution. This excellent English translation now appears under the auspices of Pergamon Press.

The volume consists of eight papers, the longest of which is devoted to a review of high-energy particle research in the U.S.S.R. Next in length are reviews of work on low-energy neutron interactions and of the use of radioisotopes in the U.S.S.R. Short, additional papers describe Soviet work in radiochemistry and the development of atomic energy in the Soviet Union.

The quality of the contributed papers is generally proportionate to the length; the Soviet scientists apparently find it difficult to say much in areas where security consciousness still runs high.

The paper on high-energy physics by Dzhelepov and Pontecorvo reviews the use of the synchrocyclotron at the Joint Institute of Nuclear Studies. First completed in December 1949, this accelerator was modified in 1950 and again in 1953 so that it finally achieves proton energies of 680 Mev. The experimental work conducted with this accelerator since 1949 is described in detail. The paper contains a large number of graphs, taken from the Soviet literature, which summarize the experimental findings on high-energy interactions. Much of the apparatus used in these experiments—such as cloud chambers, bubble chambers, and a magnetic spectrometer—is shown in photographs. A clear, running account of the state of the field of high-energy physics at the time of the experiments is given. Non-Soviet work, both theoretical and experimental, is duly noted where necessary.

The review of low-energy neutron interactions was written by Vladimirsky, Panov, Radkevich, and Sokolovsky. After a discussion of the measurements and the instruments used for this work, the state of the field is summarized, including the current knowledge of the distribution of neutron widths and level spacings, the dependence of the strength function, mean level spacing, and radiation width on atomic weight, and the less systematic data on fission parameters. The improvement in the theoretical fit of the strength function, when the asphericity of the nucleus is taken into account, is shown. However, the review is, in some respects, already out-of-date. Thus, the Porter-Thomas model of the statistical distribution of neutron widths has already gained general acceptance, and so has Wigner's model of the distribution of level spacings.

The papers on radioisotopes and radiochemistry will be of interest to workers in these fields, and indicate that the extent of work in these fields is comparable to that in the United States.

The four papers on nuclear reactors are much more sketchy and incomplete. The paper by Nikolaev outlines the development of atomic energy expected in the Soviet Union during the sixth Five Year Plan. The reactors proposed for construction are only briefly described, although further details have since been released. Generally, it is stated that the program in the U.S.S.R. has aims similar to those of the United