chain and their modes of action as individual entities. The remainder of the text discusses possible mechanisms by which mitochondria transduce energy for adenosine triphosphate synthesis, ion translocation, and the various other partial reactions experimentally noted with interest over the years.

An extensive bibliography, including that of the last section of the text, on recent advances, brings our knowledge to mid-1970, making the book a valuable secondary source for students and active workers who require the reportorial detail of the journal.

Wainio's writing style is rather straightforward and understandable. Occasional passages do much to reveal the often not too evident reality that the test tubes and apparatus that yield the data are indeed manipulated by men and women. The opening segment of chapter 2 ("NADH oxidase and succinate oxidase systems") is just such a passage, didactically excellent and an example of the more readable science available in this area of biochemistry.

Nondogmatically and thoroughly, Wainio has furnished us with a widely useful compendium on the mitochondrion. Despite the experimental frustrations that induce him to remind us that "even the sequence of electron carriers is somewhat uncertain, while the hypotheses of oxidative phosphorylation are no more than guesses," this book serves to imbue this specialized field of bioenergetics with the "to be continued" aura characteristic of all vital areas of inquiry.

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Institutes

Think Tanks. PAUL DICKSON. Atheneum, New York, 1971. xii, 370 pp. $10.

Journalists often leap in where scholars fear to tread—and the public is better off for it. Paul Dickson, a young free-lance writer, has here opened to public view the work of some 28 of an ill-defined number (600, by his shaky estimate) of "think tanks" which "perform research on matters relating to policy and the application of technology" and "act as a bridge between knowledge and power and between science/technology and policy-making."

Eight are nonprofit organizations spawned by the Defense Department, including RAND, the Institute for Defense Analyses, HumRRO, and MITRE; three, the Urban Institute and two educational policy research centers, are contract progeny of civilian agencies; two, the Army's Institute for Land Combat and the transitory White House National Goals Research Staff, are in-house elements of the Executive. Ten are a motley assortment of privately engendered nonprofit organizations, including Herman Kahn's Hudson Institute, the new-left Institute for Policy Studies, the old-centrist Brookings Institution, Robert Hutchins's Center for the Study of Democratic Institutions, Ralph Nader's activist Center for the Study of Responsive Law, and the "research à go-go" Stanford Research Institute; two, the System Development Corporation and Arthur D. Little, Inc., are for-profit companies; and three are foreign-area research groups affiliated, respectively, with the University of Pennsylvania, Stanford, and Georgetown University.

Would a sociological Linnaeus regard these diverse creatures as members of the same genus, let alone species? Dickson should have dropped government units and paid more attention to the little-known for-profit firms, which, on his own reckoning, constitute half of all "think tanks"; he is weak on operating problems and the political and economic habitat in which institutes struggle for survival; and he is wrong on a good many points. For example, most of the "highly classified" area handbooks of SORO (Special Operations Research Office) were published, quite innocuous ventures in secondary-source anthropology; Congress's control of Defense contract centers has been far from "illusory"; the government generally *does* approve center directors and their salaries; the centers are *not* "allowed to compete for non-government business"; they are *not* "legally quite free" to go for-profit without special approval and measures of restitution; RAND staff *cannot* take honoraria from other Defense centers; the not-for-profits have *not* "normally" paid taxes on their income from proprietary work; and so forth.

No matter. Dickson is good at describing the work and very good at capturing the special character of each institute, and his judgments can be refreshingly direct. Thus, A. D. Little staff have a "sense of cohesion" and "an appealing egotism," the Stanford Research Institute is "the research equivalent of the oriental bazaar," and Brookings "has restrained itself to the point of dullness." RAND's "costly weapons game[s] . . . seem paradoxically logical and absurd at the same time"; a Hudson Institute scheme is "preposterous"; "few [rightist think tanks] show Rightward bias as blatantly as Hudson does"; the list of Defense contract centers is "a fraud"; two Cambridge Institute affiliates "seem, frankly, to be a hypocritical dodge . . . to accept the federal money which the parent group rejects"; the Center for Strategic and International Studies "has become a center for policy research for the oil interests"; the National Goals Research Staff report was "at once forgettable, innocuous, dull, and dishonest."

Despite such passages and a five-page recital of evidently foolish, unnecessary, or unused projects, Dickson burnishes the tarnished mystique of "R & D," overvaluing its significance and the power of its practitioners. He depicts the institutes, and especially the Defense centers, as a virtual "shadow government" of "faceless," unaccountable men whose thinking is "profound," whose influence is "deep and fundamental," and who exercise in secret an "awesome" power "seldom challenged or questioned." This makes more of these men than most of them make of themselves. It mistakes occasional for constant influence; a confidentiality characteristic of Executive deliberations and private consulting for a perfidious secrecy peculiar to these hirelings of the Executive; and the servants for the wielders of power. Nonetheless, the book can be heartily recommended as a lively and engrossing contribution to our knowledge of policy research institutes. It may provide solace to many professionals in these days of their discomfiture.

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Personages

American Entomologists. ARNOLD MALLIS. Rutgers University Press, New Brunswick, N.J., 1971. xviii, 554 pp., illus. $15.

The popular image of an entomologist as a wild-eyed, net-swinging eccentric may be a caricature, but in fact entomology seems to have attracted more than its share of colorful personages. Asa Fitch, for example, is said to have collected specimens by putting them in his tall silk hat, and William T. Davis, when racing to catch a train, is

reported to have plopped an especially fine beetle into his mouth for safekeeping. Baron C. R. Osten-Sacken seems to have used a career in the diplomatic service primarily as an excuse to collect flies in interesting places, and Colonel T. L. Casey used a career in the army for building up a notable collection of beetles. Casey, by the way, was one of the first persons to use a microscope for describing beetles, and when he died his microscope was gently placed beside him in his casket. T. D. A. Cockerell published 3904 papers, many of them scribbled on the backs of postcards and rushed off to editors. The crotchety Harrison Dyar feuded with most of his colleagues, including the rotund John B. Smith, after whom he named a species *corpulentis*. Smith is said to have got the better of this exchange, dedicating a species to Dyar and calling it *dyaria* (pronounced, of course, diarrhea).

To a middle-aged entomologist with an interest in the past, like myself, reading this book is like a visit with old friends, a few of whom I knew personally and most of whom I know through their publications. A few of the juicier stories are not here, of course (some of them are doubtless apocryphal), and many of the accounts are somewhat too laudatory, having been compiled mainly from obituaries. But on the whole the author has succeeded in fulfilling his goal of "fleshing out" these men, so that they appear as "something more than a list of publications." His sketches—203 of them—make for much better reading than similar ones in Essig's *History of Entomology*. The book is well researched and notably free of errors. The author has missed a few items that might have enriched his book: for example, Krombein and Baker's warm appreciation of H. S. Fuller. But on the whole this is a valuable book, one that entomologists, historians of science, and students of natural history will want to have on their shelves.

A few words of warning are in order, however. To be chronicled in these pages one must have died prior to 1966. A few notable "old-timers" who have died since that time—for example F. X. Williams and W. T. M. Forbes—are not to be found, nor are a number of persons who began their careers many years ago but who are still with us. At least one octogenarian has a student included in the book although he himself was not eligible. The choice of persons to include was, of course, a difficult one, and I would argue that E. T. Cresson, Jr., for example, was more worthy of a biographical sketch than S. W. Bilsing. But I am glad that I did not have to make the decisions on these matters.

"American," by the way, is construed to mean America north of Mexico, so you will not find Costa Lima or other important Latin Americans here. Arrangement is by area of interest. For example, there is a chapter on "notable coleopterists," another on "entomologists of divers interests." I found A. G. Böving in the latter chapter, though I would have put him in the former, and many other assignments seem rather arbitrary. But there is a good index, so this matter hardly seems worth a lengthy discussion.

George Sarton remarked in 1927: "When shall we be given a good history of entomology?" The question is still a valid one. Nevertheless, we may be grateful to Arnold Mallis for doing a good job with a project of more modest dimensions. There are many fascinating specimens in his collection of insect-lovers. By contrast, contemporary entomologists seem a drab and harried lot, nursing inferiority complexes from having their manuscripts attacked by reviewers, their favorite insecticides condemned by conservationists, their cabinets moved about to make room for computers. C'est la vie.

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Advances in Enzymology and Related Areas of Molecular Biology. Vol. 34. F. F. Nord, Ed. Interscience (Wiley), New York, 1971. viii, 620 pp., illus. $21.50.

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The Closing Circle. Nature, Man, and Technology. Barry Commoner. Knopf, New York, 1971. vi, 326 pp. + index. $6.95.

Color Aerial Stereograms of Selected Coastal Areas of the United States. Harland R. Cravat and Raymond Glaser. National Oceanic and Atmospheric Administration, Rockville, Md., 1971 (available from Superintendent of Documents, Washington, D.C.). iv, 94 pp. + stereo viewer. $4.75.

Computer Operating Systems. D. W. Barron. Chapman and Hall, London, 1971 (U.S. distributor, Barnes and Noble, New York). viii, 136 pp., illus. $6.50. Modern Electrical Studies.

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