

Book Reviews

Chromosome Botany. C. D. Darlington. Allen & Unwin, London, 1956 (order from Macmillan, New York). 186 pp. Illus. \$2.75.

C. D. Darlington's book is devoted largely to the role of the chromosomes in the evolution, differentiation, and distribution of plant species in nature and in cultivation. He shows how cytogenetic analysis has clarified the origin and relationships of many species of flowering plants.

In considering the factors responsible for variation and speciation, Darlington discusses hybridization, polyploidy, structural chromosome changes, aneuploidy, and apomixis. The effect of polyploidy on the geographic distribution of species is shown to be related to adaptation to new territory and not necessarily correlated with latitude or elevation. The migration of species is correlated with chromosome change, although "an ecological diversity at the centre of a species demands a morphological and a genetic diversity, but it does not so imperatively demand a chromosome diversity."

The consideration of the origin and evolution of the cultivated economic plants in less than 30 pages necessarily limits the material presented, but it is surprising that Kihara's outstanding work on the cytogenetics of wheat is not mentioned. The chapter on the chromosome relationships in the ornamental plants is a little more adequate, although it is largely confined to work done in England.

According to Darlington, systematic botany "continues to rest half-poised on the eighteenth-century fiction that the living world is inhabited by fixed species which exist, on the one hand, as 'types' represented by original specimens in museums and, on the other hand, as 'varieties' diverging from these types by some ineffable process of mutation." Such criticism is no longer justified, since most taxonomists now use the tools of cytology, genetics, ecology, and internal anatomy in their investigations. But many of the older taxonomists, using only herbarium specimens, often showed great ability, or intuition, in separating species into groups which have withstood subsequent cytogenetic tests. And, as

Darlington points out, John Ray in 1686 defined a species in terms that are still valid.

Chromosome Botany is too limited in its scope to be used as a textbook, but it should be of interest to all botanists, agronomists, and horticulturists who are interested in the evolution, relationships, and improvement of plant species and varieties.

KARL SAX

Arnold Arboretum, Harvard University

Report of the Special Committee on the Federal Loyalty-Security Program of the Association of the Bar of the City of New York. Dodd, Mead, New York, 1956. xxvi + 301 pp. \$5.

To an area of public policy befogged by irresponsible charges, questionable statistics, and widespread misunderstanding, this report by a committee of distinguished practicing lawyers brings a new light of temperance and reason. The study was sponsored as a public service by the Association of the Bar of the City of New York and was financed by a grant from the Fund for the Republic, Inc. Dudley Baldwin Bonsal headed the committee, which was aided in its work by a small legal staff under Elliott E. Cheatham of Columbia University Law School. Some 150 informed persons, in and out of government, provided information from their experience on the operation of the federal loyalty-security program. The result is a carefully weighed review of the manner in which it has operated and a series of specific recommendations for making it more effective where it is most needed and less of a menace to justice and freedom where it has been overextended.

Early chapters discuss the basic problem of reconciling liberty with security, the nature of the Communist threat, and the countermeasures by the United States to meet the threat. The threat is seen as clear and unmistakable; the need for countermeasures, indisputable. But the committee notes that "if fear of totalitarianism were to force us into coerced uniformity of thought and belief, we should lose security in seeking it" (p.

27). Thus the need is for a security program that can continue indefinitely without interfering with scientific or economic development and without undermining the average citizen's sense of freedom and fair treatment by his government. Underlying the entire report is this thesis that myopic preoccupation with secrecy and security measures must not jeopardize this more vital and fundamental basis of true national security.

Personnel security programs are, of course, one phase of internal security. There are now several of these, covering some 6 million workers in and out of government. The committee would reduce this coverage to about 1.5 million by limiting the program to truly sensitive positions and abandoning outright the Port Security (seamen and longshoremen) and International Organizations Programs. Remaining with little change would be the Department of Defense Industrial Security Program, covering about 3 million workers in private industry, and the Atomic Energy Commission program, applicable to some 80,000 of its own and private contractors' employees. The program covering some 2.3 million civilian employees of the Federal Government under Executive Order 10450 would come in for a substantial overhaul, for it is here that the weaknesses in the current programs are believed to be most marked. These weaknesses are summarized as (i) lack of coordination and supervision among the programs, (ii) excessively broad coverage, (iii) too great rigidity in standards and criteria in view of the variety of elements to be considered, and (iv) the failure of security procedures at present to protect adequately the interests of either the government or its employees.

The committee's recommendations to overcome these weaknesses are clear and to the point, although they are too extensive for detailed recital here. A Director of Personnel and Information Security would be established in the Executive Office of the President, both to assure uniformity and fairness in the various programs and to help control the classification of information, since access to the latter tends to determine which jobs are "sensitive." The committee anticipated somewhat the Supreme Court decision of 11 June 1956, in *Cole v. Young et al.* (351 US 442) when it recommended that security clearances apply only to sensitive positions and to no others. The now infamous policy of "guilt by association" implied in uncritical use of the Attorney General's list of subversive organizations would be abandoned in favor of a policy permitting balanced judgment of suitability for employment in the light of all the evidence available. The committee recommends that the list itself either be abolished or

thoroughly revised to keep it current, to make clear the period and nature of the subversive activity involved, and to include only organizations given notice and hearing in accordance with due process of law.

The balance of the recommendations are largely procedural but nonetheless important. They are aimed clearly at preserving the elements of traditional justice in a field in which the committee found too many abuses for comfort. Among them is a central board to screen charges against Civil Service employees, making charges known to such employees in the fullest possible detail, continuing pay while the case is pending, limiting representation of the agency filing charges to one man on a three-man hearing board, having one lawyer on each board, guaranteeing the employee representation by counsel (at government expense if he is cleared), granting subpoena powers to screening and hearing boards, and curtailing "double-jeopardy" on substantially the same facts.

Some of the recommendations may appear to be unduly oriented toward the precepts of legal procedure, but I, who am no lawyer, think not. Only a strong reaffirmation of the basic procedural rights of citizens accused of a wrong, when job and reputation are at stake, will suffice to restore confidence in the security clearance program among innumerable scientists and other observers who have come to regard it with distaste. The discriminating and integrated program which the special committee here advances could, if put into effect, go far toward restoring that confidence.

The appendixes contain the best available statistics on the operation of the loyalty-security program to date as well as a useful compilation of the relevant statutes, orders, and regulations. There is an index.

ROBERT A. WALKER
*Department of Political Science,
Stanford University*

Medicinal Chemistry, vol. II. F. F. Blicke and C. M. Suter, eds. John Wiley, New York; Chapman & Hall, London, 1956. 311 pp. \$10.

The objective of the Medicinal Chemistry series is to summarize available data on structure-activity relationships of various types of drugs, with brief discussions of methods of synthesis and pharmacological test procedures.

The second volume consists of four reviews, each written by recognized experts. The first section by A. Stoll, on the cardiac glycosides, has little biological data and consists almost entirely of chemical methods used in proving structure.

It includes a supplement by T. L. Johnson. John A. Hogg and Jerome Korman, in the second section, thoroughly review the synthetic estrogens. The third by C. M. Suter briefly describes arylpiperidine analgesics. The last one, by G. E. Ulyot and J. F. Kerwin, gives a comprehensive treatment of the haloethylamine adrenergic blocking agents.

This volume, as well as others in the series, has undoubted value as a reference book. A large part of it is arranged as tabular data, and the authors are to be congratulated for their painstaking efforts in presenting so much information in so little space.

From the bibliography at the end of each review it must be assumed that the articles were written a number of years back. The lapse of time before publication is to be regretted, since the reader should expect to have the very latest in the rapidly expanding field of medicinal chemistry. This is particularly unfortunate in regard to the unusually well-written and readable chapter on adrenergic blocking agents. Most of the glowing potentialities of the β -halo-ethylamines in clinical practice have evaporated in the heat of clinical trial. Furthermore, it is now generally accepted that norepinephrine, rather than epinephrine, is the neurohumoral agent against which these substances should be effective.

BERNARD B. BRODIE
*Laboratory of Chemical Pharmacology,
National Heart Institute*

Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

A Revision of the Genus Megarthroglossus Jordan and Rothschild, 1915 (Siphonaptera: Hystrichopsyllidae). University of California Publ. in Entomology, vol. 11, No. 3. Eustrogio Mendez. University of California Press, Berkeley, 1956. 34 pp. \$0.85.

Joint Spacing in Concrete Pavements: 10-Year Report on Six Experimental Projects. Highway Research Bd. Research Rept. 17-B. National Academy of Sciences-National Research Council, Washington, 1956. 159 pp. \$2.70.

The Child and His Family in Disaster: A Study of the 1953 Vicksburg Tornado. Disaster Study No. 5. Stewart E. Perry, Earle Silber, Donald A. Bloch. 62 pp. \$1.50. *Social Aspects of Wartime Evacuation of American Cities*. With particular emphasis on long-term housing and reemployment. Disaster Study No. 4. Fred C. Ikle and Harry V. Kincaid. 100 pp. \$2. Committee on Disaster Studies, National Academy of Sciences-National Research Council, Washington, 1956.

National Vitamin Foundation, Report to the Board of Governors by the Scientific Director. 1 Jan. 1955-31 Dec. 1955. The Foundation, New York 22, 1956. 73 pp.

Geographic Distribution in Exchange Programs. Geographic considerations in the selection and placement of U.S. Government-sponsored exchange students. Committee on Educational Interchange Policy, New York, 1956. 17 pp.

Annotated Bibliography of Hydrology (1951-54) and Sedimentation (1950-54) United States and Canada. Supplement to the *Annotated Bibliography on Hydrology* and the *Annotated Bibliography on Sedimentation*. Compiled and edited by American Geophysical Union, Washington, 1956 (order from Supt. of Documents, GPO, Washington 25). 207 pp. \$1.25.

Educators Guide to Free Slidefilms. Compiled and edited by Mary Foley Horkheimer and John W. Diffor. ed. 8. 188 pp. \$5. *Elementary Teachers Guide to Free Curriculum Materials*. Patricia Horkheimer Suttles. ed. 13. 318 pp. \$5.50. Educators Progress Service, Randolph, Wis., 1956.

New York Foundation, Two Year Report. 1954-1955. New York Foundation, New York, 1956. 43 pp.

Your Career as an Engineer in Aviation. Institute of the Aeronautical Sciences, New York 21, 1956. 21 pp.

New Channels for the Golden Years. New York State Joint Legislative Committee on Problems of the Aging (Available from Thomas C. Desmond, Chairman, 94 Broadway, Newburgh, N.Y.). 151 pp.

Tobacco Industry Research Committee, Report of the Scientific Director, 1956. The Committee, New York, 1956. 24 pp.

Report of the Pest Infestation Research Board, 1955. With the report of the Director of Pest Infestation Research. 62 pp. 4s. *Report of the Hydraulics Research Board, 1955*. With the report of the Director of Hydraulics Research. 56 pp. 4s. *Report of the Chemistry Research Board, 1955*. With the report of the Director of the Chemical Research Laboratory. 88 pp. 4s. *Report of the Water Pollution Research Board 1955*. With the report of the Director of Water Pollution Research. 81 pp. 4s. *Wage Accounting by Electronic Computer*. Report No. 1 of the Inter-Departmental Study Group on the Application of Computer Techniques to Clerical Work. 57 pp. 2s. 6d. *Automation*. A report on the technical trends and their impact on management and labor. 106 pp. 6s. Department of Scientific and Industrial Research, Her Majesty's Stationery Office, London, 1956.

Report of the Medical Research Council for the Year 1954-1955. Committee of Privy Council for Medical Research. Her Majesty's Stationery Office, London, 1956. 286 pp. 10s.

The Application of Physical Sciences to Food Research, Processing and Preservation. Southwest Research Institute, San Antonio, Tex., 1956. 179 pp. \$5.

A Study of African Chironomidae. pt. II. Bull. Brit. Mus. (Nat. Hist.) Entomology, vol. 4, No. 7. Paul Freeman. British Museum (Natural History), London, 1956. 80 pp. £1.

Midwest Research Institute, Annual Report of the President to the Trustees. 11th annual report. Midwest Research Institute, Kansas City 10, Kansas, 1956. 17 pp.