Experimental Section[a]

1-Adamantyl Azidomethyl Ketone (1).—A mixture of 5.14 g (20 mmoles) of 1-adamantyl bromomethyl ketone (Aldrich Chemical Co., mp 76–79°), 2.6 g (40 mmoles) of NaN_3, and 200 ml of MeOH was boiled gently on the steam bath for 20 min. MeOH was evapd *in vacuo*. The remaining mixture was stirred with 100 ml of pet ether (bp 30–60°) and filtered. Evaporation of the filtrate gave 4.11 g (94%) of essentially pure 1 as a light yellow oil which was used in the pyrolysis. This oil could be purified by solution in a small vol of pet ether and chilling in Dry Ice bath: colorless needles; mp 24–25.5°; ir (CCl_4) 2105 (N_3). *Anal.* ($C_{12}H_{17}N_3O$) C, H, N.

2-(1-Adamantanoyl)-4(or 5)-(1-adamantyl)imidazole (2).—A soln of 13.2 g (60 mmoles) of crude 1 in 200 ml of xylene was heated to a slow reflux for 15 hr. Upon partial concn and cooling of the mixture, 8.0 g (73%) of **2** pptd as a colorless amorphous solid, mp 267.5–269.5°. After recrystn from PhMe, colorless needles were obtained: mp 267.5–269.5°; ir (KBr) 3320 (NH) and 1645 cm^{-1} (CO); uv (EtOH) 296 nm (ϵ 16,200); mass spectra (low resol) *m/e* 79, 93, 135, 149, 202, 216, 229, 307, 336 and 364. *Anal.* ($C_{24}H_{32}N_2O$) C, H N.

(3) Melting points were taken in a Thomas-Hoover melting point apparatus, and are corrected. Ir spectra were determined using a Beckmann IR-9 spectrophotometer, mass spectra with a CEC-21-110 spectrometer, nmr spectra with a Varian A-60 spectrometer (Me_4Si), and uv spectrum with a Cary 15 recording spectrophotometer.

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Book Reviews

Lithium in the Treatment of Mood Disorders. By ANTOINETTE A. GATTOZZI. National Clearinghouse for Mental Health Information, Publication No. 5033. U. S. Government Printing Office, Washington, D. C. 20402. 1970. vi + 99 pp. 15 × 23 cm. Paperback. 60 cents.

Lithium is used in light-weight alloys, in the fusion–fusion reaction of thermonuclear explosions, and now in psychiatry. The story of the discovery of the therapeutic effect of Li^+ in manic states by John F. J. Cade in Australia in 1949 provides one of the most instructive examples of serendipity and ensuing logical development in medicinal chemistry. Even more interesting is the subsequent assignment of Li^+ therapy to the differential diagnosis of severe mood disturbances. The little book at hand recounts these events in the form of an easily understood documented story, and places Li^+ therapy in the total framework of medical findings and patient care. It is a stimulating and amazing story to read.

UNIVERSITY OF VIRGINIA ALFRED BURGER
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Progress in Drug Research. Volume 13. Edited by E. JUCKER. Birkhäuser Verlag. Basel and Stuttgart. 1969. 413 pp. 24 × 17.5 cm. Fr. 118.

The collection of periodic reviews presented in this volume contains the following articles: Biological activity of the terpenoids and their derivatives (M. Martin-Smith, W. E. Sneader); Antihypertensive agents, 1962–1968 (O. Schier, A. Marxer); Comparative drug metabolism (L. B. Mellett); Repository antimalarial drugs (E. F. Elslager); Hypolipidemic agents (W. L. Bencze, R. Hess, G. deStevens); Quinuclidine derivatives (M. D. Mashkovsky, L. N. Yakhontov); and Reactivity of rat and man to egg-white (S. I. Ankier). Some of these reviews constitute broad surveys of multiple structural types while others (such as that on quinuclidines) concentrate on a narrower structural field. The largest scope is covered in the terpenoid article; it includes innumerable indole alkaloids whose biogenetic derivation from more traditional terpenes justifies their incorporation in this review. But the compounds in this chapter have been chosen frankly with biological activity in mind, and the author has achieved this goal with skill and in depth, both in discussing the very complex chemistry and the therapeutic applications of the products.

The other systematic reviews of structure–activity relationships will be valuable reference articles, especially since they have been written by acknowledged experts in each field. The survey of comparative drug metabolism leans, and quite rightly so, toward the physiological significance of biochemical metabolic reactions. The most "far-out" article concerns immunochemical aspects of egg-white, and again the right mixture of chemical and biological balance has been attained in this review. Altogether, this is one of the best collections of articles in this series, and its high quality should presage equally good selections in future volumes.

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The Chemistry of Cyclic Enaminonitriles and *o*-Aminonitriles. By EDWARD C. TAYLOR and ALEXANDER MCKILLOP. Interscience. New York, N. Y. 1970. xii + 415 pp. 15 × 23 cm. $29.59

The first chapter of this book is devoted to cyclic enaminonitriles. The emphasis in this chapter is on the scope of the Thorpe–Ziegler reaction in the preparation of enaminonitriles from dinitriles. Shorter sections are devoted to review of physical evidence for the structure of enaminonitriles and to a summary of the hydrolysis of enaminonitriles. An attempt to review the literature comprehensively has been made and nearly 30 of the 60 pages in this chapter are devoted to tables showing starting materials, cyclization conditions, yield, and product structure for numerous Thorpe–Ziegler cyclizations. There are also extensive tables summarizing the literature regrading hydrolysis of enaminonitriles. The second chapter of the book is devoted to the synthesis and reactions of aromatic *o*-aminonitriles, both heterocyclic and homocyclic. The section on reactions emphasizes the important area of using *o*-aminonitriles for construction of new fused rings, particularly substituted pyrimidines. Again much of the chapter (over 200 pages) is devoted to tables summarizing preparation and reactions of *o*-aminonitriles. Generous use of structural formulas has been been made in the tables. Particularly impressive is Table XXX which lists all known cyclic enaminonitriles and *o*-aminonitriles in order of increasing complexity of molecular formula. For each entry literature references to preparation and, where applicable, its subsequent use as a synthetic intermediate are given. Needless to say the effort required for compilation of this table must have been enormous. As a result this book gives, to chemists interested in synthesis or use of aminonitriles, very ready access to the extensive prior literature in the field. Workers in the field of synthesis and reactions of nitrogen heterocyclic compounds will want to have the vast amount of information in the volume easily available.

DEPARTMENT OF CHEMISTRY RICHARD J. SUNDBERG
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Annual Reports in Medicinal Chemistry. 1969. Edited by C. K. CAIN with 56 contributors. Academic Press. New York, N. Y. 1970. xxiii + 378 pp. 17.8 × 25.4 cm. Paper-backed. Type-offset. $8.75.

The excitement conveyed by the 1968 Annual Reports continues to shine through many of the articles in the 1969 volume. After reading other recent periodic review volumes, one cannot escape the feeling that the editors of this series must have impressed upon their contributors their own enthusiasm about the future of medicinal chemistry, technical, scientific, and regulatory difficulties notwithstanding. Indeed, one feels that the lack of adequate understanding of the etiology of many diseases, and of pertinent test methods, and of means of discovering new leads, is taken up as a challenge rather than as a lamentable situation. Somehow the future of medicinal chemistry seems brighter from these Reports, than predicted by many recent symposia which appear to have emphasized bottlenecks rather than glimpses of an experimentally defendable future.

The six main topics under review are CNS-active agents, pharmacodynamic drugs, chemotherapeutic agents, compounds of interest in metabolic diseases and endocrine functions, topics in biology (drug metabolism, SAR of peptides, nucleosides, effects of structured H_2O), and topics in chemistry (a catch-all for MO-regression analysis, synthetic methods, antiradiation drugs, and reactions of interest (?) in medicinal chemistry). There are lots of practical viewpoints and reviews of current facts and data, but one finds always a mechanistic approach to each problem and an emphasis on the need for closest cooperation between experimental biologists and chemists.

This is the most up-to-date review on recent events in medicinal chemistry and should be on the working-book shelf of every scientist in the field.

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Additions and Corrections

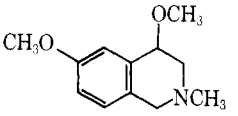
1969, Volume 12

A. F. Crowther, D. J. Gilman, B. J. McLoughlin, L. H. Smith, R. W. Turner, and T. M. Wood: β-Adrenergic Blocking Agents. V. 1-Amino-3-(substituted phenoxy)-2-propanols.

Page 639. In column 1, line 5, read (method B) instead of (method A) and line 9, read (method A) instead of (method B).

R. Howe, E. H. P. Young, and A. D. Ainley: Hypotensive Agents. (+)- and (−)-2-Methoxy-2-(3-methoxyphenyl)ethylamine and Related Compounds.

Page 998. Compound **8** is a tetrahydroisoquinoline by mass spectrum (*m/e* 207) and nmr. The authors thank Dr. S. Teitel who suggested this possibility.



8

1970, Volume 13

B. R. Baker, N. M. Vermeulen, and A. J. Ryan: Irreversible Enzyme Inhibitors. CLXVIII.

Pages 281 and 282. In column 3, Tables I and II, mouse liver should be one line below L1210/DF8 in each case.

D. S. Bariana: Coumarin Derivatives as Coronary Vasodilators.

Page 546. Add to the Acknowledgments: The author is indebted to Cassella Farbwerke Mainkur AG, Frankfurt, Germany, for supplying the intermediate 3-β-diethylaminoethyl-4-methyl-7-hydroxycoumarin.