addition chemistry. The development of a bidentate phosphite ligand permits successful cycloadditions that otherwise fail and, as such, enlarges significantly the utility of this methodology.

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Supplementary Material Available: Characterization of **2–4**, **6–17**, **20**, **23**, and **24** (6 pages). Ordering information is given on any current masthead page.

Additions and Corrections

Olefin Formation in the Oxidative Deformylation of Aldehydes by Cytochrome P-450. Mechanistic Implications for Catalysis by Oxygen-Derived Peroxide [*J. Am. Chem. Soc.* **1991**, *113*, 5886–5887]. ALFIN D. N. VAZ,* ELIZABETH S. ROBERTS, and MINOR J. COON

The following information was inadvertently omitted during publication: formate, the product formed in the decarbonylation of cyclohexanecarboxaldehyde along with cyclohexene by cytochrome P-450, was derivatized as the *p*-nitrobenzyl ester and identified by mass spectrometry.

Palladium-Mediated Stereocontrolled Reductive Amination of Azido Sugars Prepared from Enzymatic Aldol Condensation: A General Approach to the Synthesis of Deoxy Aza Sugars [*J. Am. Chem. Soc.* **1991**, *113*, 6678]. TETSUYA KAJIMOTO, LIHREN CHEN, KEVIN K. K.-C. LIU, and CHI-HUEY WONG*

The configuration at C-3 of compound **4b** should be inverted. Compound **1b** should have the inverted configuration at the corresponding carbon. This compound was prepared from Fuc-1-P aldolase instead of Rham-1-P aldolase.

*Book Reviews**

The Alkaloids, Chemistry and Pharmacology. Volume 39. Edited by A. Brossi (National Institutes of Health). Academic Press, Inc.: San Diego, CA. 1991. xi + 364 pp. $95.00. ISBN 012-469539-6.

The first extremely well written chapter on the betalains was prepared by W. Steglich and D. Strack. The betalains have, of course, received attention by the food industry for use as nonmutagenic color additives. The present chapter highlights recent findings in the area, critically surveying the present state of betaiain chemistry and describing the distribution of betalains in plants. The chapter is replete with an interesting compilation of isolation methods, chemical degradations, spectroscopic details, reaction mechanisms, and biological facts. An encyclopedic listing of the individual pigments is provided in Part B of this chapter, while synthesis, chemotaxonomy, and biosynthesis are found in the latter sections.

The second chapter, by W. Ross, provides a description of the biogenic benzodiazepine alkaloids. These natural compounds are to be contrasted in terms of biological activity with their synthetic relatives, which possess tranquilizing properties. Structure elucidation, biosynthesis, metabolic conversion to quinolines, physiological aspects, and biological activity are covered. Interestingly, of the various members of this family, only asperlicin and specifically analogues of it appear to hold promise as pharmacological agents. This chapter is again extremely rich in detail.

Chapter 3, by L. Castedo and G. Tojo, concerns a class of alkaloids that lacks a nitrogen heterocycle, the phenanthrene alkaloids. An encyclopedic listing of members of this family together with spectral data make up about 20 pages of the chapter. The synthesis of these compounds is considered next and provides some interesting transformations. The pharmacology of these compounds is covered in one single (the last) page of the chapter.

The vegetable drug khat, which is chewed by habitants of several countries for its stimulant properties, is covered in Chapter 4, prepared by L. Crombie, W. M. L. Crombie, and D. A. Whiting. The synthesis and pharmacology of the khatamines are covered first, then the more complex structures, the cathedulin alkaloids, and synthetic work relevant to these alkaloids is detailed next. The chapter is succinct and ends abruptly.

As stated by the authors, H. Hashimoto, K. Kawanishi, and M. Ichimaru, Chapter 5 reviews biological and biochemical investigations of plants from five families using histochemical and other techniques. The authors also describe their apparatus used for histochemical chromatography and its application to plant and animal tissues. While interesting, this particular chapter seems somewhat out of sync with the foregoing ones, especially in view of the more chemical orientation of the earlier chapters. It would seem that this chapter should have been located at the end of the volume or perhaps better published together with like chapters in a separate volume.

Chapter 6, by S. Blechert and D. Guenard, focuses on the structure and isolation of the taxus alkaloids and updates the earlier review of Suffness and Cordell published in Volume 25 of *The Alkaloids*. Major portions of the chapter are devoted to semisynthesis protocols for producing taxol analogues, as well as synthetic efforts aimed toward constructing the tricyclic taxane framework in the laboratory. Total synthesis in this area is, of course, a difficult feat to achieve in view of both the unusual ring system and complex functionality present in the taxanes. The potential of taxol in the treatment of solid tumors and adult leukemia will undoubtedly lead to continued synthetic pursuits. The problems of obtaining adequate supplies of the compound from the yew tree is discussed in the pharmacology section of the chapter.

The last chapter, by G. W. Gribble, concerns the ellipticine alkaloids and related materials and also updates a chapter appearing in Volume

*Unsigned book reviews are by the Book Review Editor.