

THE PERGAMON PHYTOCHEMISTRY PRIZE AND CERTIFICATE FOR 1994

The publishers and the Editorial Board of *Phytochemistry* are pleased to announce that the winner of the 1994 prize is

Professor ERIC E. CONN



Eric Conn's contributions to the field of phytochemistry span an illustrious career of more than 40 years. The majority of this time was spent in the University of California, first at the Berkeley campus and later at Davis. His research efforts have impacted most significantly within the field of natural product biochemistry focusing particularly on phenols, coumarins and cyanogenic glycosides. His pioneering studies of the shikimate pathway, the phenylpropanoid pathway, and the localization and compartmentalizing of numerous secondary natural products and their respective metabolic enzymes have gained him well-deserved world wide recognition. Indeed, thousands of publications have been produced because of his discovery of the enzyme phenylalanine ammonia lyase (PAL). The range of his work has been very broad. Early work in his career described fundamental processes involved in the oxidation/reduction of NADP⁺ and associated reactions which are now standard textbook dogma. In recent years, he has contributed extensively to chemotaxonomic investigations into cyanide containing genera, especially the *Acacia*. His publication record includes nearly 200 manuscripts, including 28 peer reviewed papers in the journal *Phytochemistry*. Additionally, he has served as President of American Society of Plant Physiology, as well as President, Editor-In-Chief, and Life Member of the Phytochemical Society of North America.

These contributions alone would more than justify his recognition as one of the most outstanding phytochemists of this century. However, Eric had even more impact on the field of phytochemistry through his sustained teaching efforts, both as a mentor and instructor of plant biochemistry. Thousands of undergraduate and graduate students have listened intently to his stimulating lectures, and he has been recognized many times for his teaching activities. In addition, more than 100 visiting scientists, graduate students and postdoctoral associates from all around the world have received the privilege of extended training in Eric Conn's laboratory. Eric was not content to teach merely in the classroom or laboratory. His *Outlines of Biochemistry*, edited by Eric Conn and Paul Stumpf, which is now in its fifth edition, has been one of the outstanding text books in biochemistry for the last 30 years. Eric also edited a 16 volume set *The Biochemistry of Plants, a Comprehensive Treatise*, as well as six volumes of the *Recent Advances in Phytochemistry*.

Eric E. Conn is truly an outstanding scientist and teacher, and has made a tremendous impact on phytochemistry in the last 40 years. He is a modest and warm human being who has touched the lives of three generations of scientists, including all of us.

*Biographical Sketch**Born*

January 1923 in Berthoud, Colorado.

Education

University of Colorado, Boulder B.A. Chemistry (cum laude)	1944
University of Chicago, Chicago Ph.D. Biochemistry	1950

Awards and Honours

U.S. Public Health Service Senior Postdoctoral Fellowship	1960
Fulbright Research Grant, tenable in New Zealand	1965–1966
NSF Senior Postdoctoral Fellowship, declined in favour of Fulbright grant	
Distinguished Teaching Award of the Academic Senate, University of California at Davis	1973
Faculty Research Lecturer of the Academic Senate, University of California at Davis	1977
Awarded Life Membership to Phytochemical Society of North America	1981
A plant species, <i>Acacia conniana</i> , named in honour of his research on cyanogenesis in plants [see <i>Nuytsia</i> 5, 323 (1984)]	
Member, National Academy of Science	1988
University of California, Davis Prize for Teaching and Scholarly Achievement	1990
Charles Reid Barnes Life Membership, American Society of Plant Physiologists	1991

Visiting Appointments, Lectureships

Visiting Professor, University of Guelph	March 1980
Plenary Lecturer, New Zealand Biochemical Society	August 1980
Roslyn Flora Goulston Memorial Lecturer, University of Sydney	October 1981
Philip Newmark Memorial Lecturer, University of Kansas	1989
Loomis Memorial Lecturer, Iowa State University	September 1990
Plenary Lecturer, International Joint Symposium of Gesellschaft für Arzneipflanzenforschung, American Society of Pharmacognosy, Association Francaise pour l'Enseignement et la Recherche en Pharmacognosie, Phytochemical Society of Europe, Bonn, F.R.G.	17–21 July 1990
National Science Council Lectureship, Taiwan	December 1991

Major Research Interests

Metabolism of natural products, especially cyanogenic glycosides and coumarins.
Enzymes of the shikimate pathway in plants.

Research and/or Professional Experience

Professor, Department of Biochemistry and Biophysics, University of California, Davis	1964–Present
Associate Professor, Department of Biochemistry and Biophysics, University of California, Davis	1958–1964
Assistant Professor, Department of Plant Biochemistry, University of California, Berkeley	1954–1958
Assistant Professor, Soils and Plant Nutrition, University of California, Berkeley	1953–1954
Instructor, Soils and Plant Nutrition, University of California, Berkeley	1952–1953
Instructor, Biochemistry, University of Chicago, Chicago, IL	1950–1952

A selection of Professor Conn's publications
(41 from a list of 175)

Conn, E. E., Vennesland, B. and Kraemer, L. M. Distribution of a triphosphopyridine nucleotide specific enzyme catalyzing the reversible oxidative decarboxylation of malic acid in higher plants. *Arch. Biochem. Biophys.* 23, 179 (1949).

- Conn, E. E. and Vennesland, B. The enzymatic reduction of glutathione by triphosphopyridine nucleotide. *Nature* **167**, 976 (1951).
- Westheimer, F. H., Fisher, H. F., Conn, E. E. and Vennesland, B. The enzymatic transfer of hydrogen from alcohol to DPN. *J. Am. Chem. Soc.* **73**, 2403 (1951).
- Fisher, H. F., Conn, E. E., Vennesland, B. and Westheimer, F. H. The direct enzymatic transfer of hydrogen atoms between substrates and pyridine nucleotides. I. The reaction catalyzed by alcohol dehydrogenase. *J. Biol. Chem.* **202**, 687 (1953).
- Kosuge, T. and Conn, E. E. Metabolism of aromatic compounds in higher plants. I. Coumarin and *O*-coumaric acid. *J. Biol. Chem.* **234**, 2133 (1959).
- Bove, C. and Conn, E. E. The metabolism of aromatic compounds in higher plants. II. Purification and properties of the oxynitrilase of *Sorghum vulgare*. *J. Biol. Chem.* **236**, 207 (1961).
- Kosuge, T. and Conn, E. E. The metabolism of aromatic compounds in higher plants. III. β -Glucosides of *O*-coumaric, coumarinic and melilotic acids. *J. Biol. Chem.* **236**, 1617 (1961).
- Koukol, J. and Conn, E. E. The metabolism of aromatic compounds in higher plants. IV. Purification and properties of the phenylalanine deaminase of *Hordeum vulgare*. *J. Biol. Chem.* **236**, 2692 (1961).
- Kosuge, T. and Conn, E. E. Metabolism of aromatic compounds in higher plants. V. Purification and properties of dihydrocoumarin hydrolase of *Melilotus alba*. *J. Biol. Chem.* **237**, 1653 (1962).
- Blumenthal-Goldschmidt, S., Butler, G. W. and Conn, E. E. Incorporation of hydrocyanic acid labelled with carbon-14 into asparagine in seedlings. *Nature* **197**, 718 (1963).
- Uribe, E. G. and Conn, E. E. The metabolism of aromatic compounds in higher plants. VII. The origin of the nitrile nitrogen atom of dhurrin (β -D-glucopyranosyloxy-L-p-hydroxymandelonitrile). *J. Biol. Chem.* **241**, 92 (1966).
- Floss, H. G., Hadwiger, L. and Conn, E. E. Enzymatic formation of β -cyanoalanine from cyanide. *Nature* **208**, 1207 (1965).
- Seely, M. K., Criddle, R. S. and Conn, E. E. The metabolism of aromatic compounds in higher plants. VII. On the requirement of hydroxynitrile lyase for flavin. *J. Biol. Chem.* **241**, 4457 (1966).
- Russell, D. W. and Conn, E. E. The cinnamic acid 4-hydroxylase of pea seedlings. *Arch. Biochem. Biophys.* **122**, 256 (1967).
- Blumenthal, S. G., Hendrickson, H. R., Abrol, Y. P. and Conn, E. E. Cyanide metabolism in higher plants. III. The biosynthesis of β -cyanoalanine. *J. Biol. Chem.* **243**, 5302-5307 (1968).
- Russell, D. W., Conn, E. E., Sutter, A. and Grisebach, H. Hydroxylation-induced migration and retention of tritium on conversion of (4-³H) cinnamic acid to 4-hydroxycinnamic acid by an enzyme from pea seedlings. *Biochim. Biophys. Acta* **170**, 210-213 (1968).
- Hahlbrock, K. and Conn, E. E. Purification and properties of a UDP-glucose: ketone cyanohydrin β -glucosyltransferase from *Linum usitatissimum* L. *J. Biol. Chem.* **245**, 917-922 (1970).
- Tapper, B. A., Zilg, H. and Conn, E. E. 2-Hydroxyaloximes as possible precursors in the biosynthesis of cyanogenic glycosides. *Phytochemistry* **11**, 1047-1053 (1972).
- Zilg, H., Tapper, B. A. and Conn, E. E. The origin of the glucosidic linkage oxygen of the cyanogenic glucosides, linamarin and lotaustralin. *J. Biol. Chem.* **247**, 2384-2386 (1972).
- Zilg, H. and Conn, E. E. Stereochemical aspects of lotaustralin biosynthesis. *J. Biol. Chem.* **249**, 3112-3115 (1974).
- Potts, J. R. M., Weklych, R. and Conn, E. E. The 4-hydroxylation of cinnamic acid by *Sorghum* microsomes and the requirement for cytochrome P-450. *J. Biol. Chem.* **249**, 5019-5026 (1974).
- McFarlane, I. J., Lees, E. M. and Conn, E. E. The *in vitro* biosynthesis of dhurrin, the cyanogenic glycoside of *Sorghum bicolor*. *J. Biol. Chem.* **250**, 4708-4713 (1975).
- Saunders, J. A., Conn, E. E., Lin, C. H. and Shimada, M. Localization of cinnamic acid-4-monooxygenase and the membrane bound enzyme system for dhurrin biosynthesis in *Sorghum* seedlings. *Plant Physiology* **60**, 629-634 (1977).
- Kojima, M., Poulton, J. E., Thayer, S. S. and Conn, E. E. Tissue distributions of dhurrin and of enzymes involved in its metabolism in leaves of *Sorghum bicolor*. *Plant Physiol.* **63**, 1022-1028 (1979).
- Møller, B. L. and Conn, E. E. N-hydroxytyrosine as an intermediate in the biosynthesis of dhurrin by *Sorghum bicolor* (Linn) Moench. *J. Biol. Chem.* **254**, 8575-8583 (1979).