

## CURRICULUM VITAE

(Updated, March, 2004)

**Name:** George Clayton Carroll

**Date/Place of Birth:** Feb. 11, 1940; Alton, Illinois

### **Education:**

<u>Degree</u>	<u>University</u>	<u>Date</u>
B.A. (Botany)	Swarthmore College	1962
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Ph.D. (Botany)	University of Texas (Austin)	1966

### **Teaching/Research Experience:**

NSF Research Fellow	Copenhagen University	1962-1963
NSF Research Fellow	University of Texas	1963-1966
Teaching Assistant	University of Texas	1966
Assistant Professor	University of Oregon	1967-1972
Associate Professor	University of Oregon	1972-1982
Visiting Professor	ETH, Zürich, Switzl.	1973-1974
Professor	University of Oregon	1982 -2003
Emeritus Professor	University of Oregon	2003 - present
Visiting Professor	Kyoto Univ., Kyoto, Japan	Sept. 1988 – Dec. 1989
Visiting Professor	University of Orange Free State Bloemfontein, RSA	June, 1996- Sept, 1997

### **Major Research Interests:**

Fungal mutualism; fungal leaf/stem endophytes; evolution of fungal endophytes; fungal population biology; indoor molds: their ecology and systematics

### **Membership in Professional Societies:**

Mycological Society of America  
British Mycological Society

## Publications

### REFEREED JOURNAL ARTICLES

- Carroll, G. 1963. Studies on the flora of Thailand. Pyrenomycetes. Dansk Botanisk Archiv **23**:101-104
- Carroll, G. 1964. Pyrenomycetes, mainly Xylariaceae, from some South Pacific islands. Botanisk Tidskrift **59**:301-310.
- Carroll, G. and A. Munk. 1964. Studies on lignicolous Sordariaceae. Mycologia **56**:77-98.
- Carroll, G. and R. Dykstra. 1966. Synaptinemal complexes in *Didymium iridis*. Mycologia **78**:166-169.
- Denison, W.C. and G.C. Carroll. 1966. The primitive Ascomycete: a new look at an old problem. Mycologia **58**:249-269.
- Carroll, G. 1967. The fine structure of the ascus septum in *Ascodesmis sphaerospora* and *Saccobolus kerverni*. Mycologia **59**:527-532.
- Carroll, G. 1967. The ultrastructure of ascospore delimitation in *Saccobolus kerverni*. Journal of Cell Biology **33**:218-224.
- Brenner, D.M. and G. Carroll. 1968. Fine-structural correlates of growth in hyphae of *Ascodesmis sphaerospora*. Journal of Bacteriology **95**:658-671.
- Carroll, G.C. 1969. A study of the fine structure of ascosporeogenesis in *Saccobolus kerverni*. Archiv fur Mikrobiologie **66**:321-339.
- Aldrich, H.C. and G. Carroll. 1971. Synaptonemal complexes and meiosis in *Didymium iridis*: a reinvestigation. Mycologia **63**:308-316.
- Bernstein, M.E., H.M. Howard, and G. Carroll. 1973. Fluorescence microscopy of Douglas fir foliage epiflora. Canadian Journal of Microbiology **19**:1129-1130.
- Carroll, F.E. and G. Carroll. 1973. Senescence and death of the conidiogenous cell in *Stemphylium botryosum* Wallroth. Archiv fur Mikrobiologie **94**:109-124.
- Carroll, F.E. and G. Carroll. 1974. The fine structure of conidium initiation in *Ulocladium atrum*. Canadian Journal of Botany **52**:443-446.
- Carroll, G. and F.E. Carroll. 1974. The fine structure of conidium development in *Phialocephala dimorphospora*. Canadian Journal of Botany **52**:2119-2128.
- Sherwood, M. and G. Carroll. 1974. Fungal succession on needles and young twigs of old-growth Douglas fir. Mycologia **66**:499-506.
- Bernstein, M.E. and G. Carroll. 1977. Internal fungi in old-growth Douglas fir foliage. Canadian Journal of Botany **55**:644-653.
- Bernstein, M.E. and G. Carroll. 1977. Microbial populations on Douglas fir needle surfaces. Microbial Ecology **4**:41-52.
- Carroll, G.C. and F.E. Carroll. 1978. Studies on the incidence of coniferous needle endophytes in the Pacific Northwest. Canadian Journal of Botany **56**:3034-3043.
- Cooper, G. and G.C. Carroll. 1978. Ribitol as a major component of water-soluble leachates from *Lobaria oregana*. The Bryologist **81**:568-572.
- Carroll, G.C. 1979. Needle microepiphytes in a Douglas fir canopy: biomass and distribution patterns. Canadian Journal of Botany **57**:1000-1007.
- Carroll, G.C., L.H. Pike, J.R. Perkins, and M. Sherwood. 1980. Biomass and distribution patterns of conifer twig microepiphytes in a Douglas fir forest. Canadian Journal of Botany **58**:624-630.

- Swisher, R. and G.C. Carroll. 1980. Fluorescein diacetate hydrolysis as an estimator of microbial biomass on coniferous needle surfaces. *Microbial Ecology* **6**:217-226.
- Petrini, O. and G.C. Carroll. 1981. Endophytic fungi in foliage of some Cupressaceae in Oregon. *Canadian Journal of Botany* **59**:629-636.
- Carroll, G. and O. Petrini. 1983. Patterns of substrate utilization by some fungal endophytes from coniferous foliage. *Mycologia* **75**:53-63.
- Stone, J. and G. Carroll. 1985. Observations of the development of ascocarps in *Phaeocryptopus gaeumanni* and on the possible existence of an anamorphic state. *Sydowia* **38**:317-323.
- Sherwood-Pike, M., J.K. Stone, and G.C. Carroll. 1985. *Rhabdocline parkeri*, a ubiquitous foliar endophyte of Douglas-fir. *Canadian Journal of Botany* **64**:1849-1855.
- Carroll, G.C. 1987. Fungi isolated from gypsy moth egg-masses. *Mycotaxon* **29**:299-305.
- Petrini, L.E., Petrini, O., Leuchtman, A., and G.C. Carroll. 1991. Conifer-inhabiting species of *Phyllosticta*. *Sydowia* **43**:148-169.
- Leuchtman, A., Petrini, O., Petrini, L.E., and G.C. Carroll. 1992. Isozyme polymorphism in six endophytic *Phyllosticta* species. *Mycological Research* **96**:287-294.
- Cabral, D., Stone, J.K., and G.C. Carroll. 1993. A census of the endophytic mycoflora of *Juncus* spp.: microscopic and cultural observations of infection patterns. *Mycological Research* **97**: 367-376.
- McCutcheon, T.L., Carroll, G.C., and S. Schwab. 1993. Genotypic diversity in populations of a fungal endophyte from Douglas fir. *Mycologia* **85**: 180-186.
- Wilson, D., and G.C. Carroll. 1994. An endophyte of Oregon white oak: infection studies of *Discula quercina*. *Mycologia* **86**: 635-647.
- Wilson, D. and G.C. Carroll. 1997. Avoidance of high-endophyte space by gall-forming insects. *Ecology* **78**: 2153-2163.
- Baayen, R.P., P.J.M. Bonants, G. verkley, G.C. Carroll, H.A. van der Aa, W. de Weerd, I.R. van Brouwershaven, G.C. Schutte, W. Maccheroni Jr., C. Glienke de Blanco, and J.L. Azevedo. 2002. Nonpathogenic isolates of the Citrus black spot fungus, *Guignardia citricarpa*, identified as a cosmopolitan endophyte of woody plants, *G. mangiferae* (*Phyllosticta capitalensis*). *Phytopathology* **92**: 464-477.
- Bonants, Peter J.M.; George C. Carrol, Marjanne de Weerd, Ilse R. van Brouwershaven, and Robert P. Baayen. 2003. Development and validation of a fast PCR-based detection method for pathogenic isolates of the citrus black spot fungus, *Guignardia citricarpa*. *European Journal of Plant Pathology* **109**: 503-513.

#### BOOK CHAPTERS/REVIEW ARTICLES

- Carroll, F.E. and G. Carroll. 1971. Fine structural studies on poroconidium formation in *Stemphylium botryosum*. pp. 75-91 *In*: "Taxonomy of Fungi Imperfecti." Ed. B. Kendrick, University of Toronto Press, Toronto, Canada.
- Carroll, G.C. 1980. Forest canopies: complex and independent subsystems. pp. 87-107 *In*: "Forests: Fresh Perspectives from Ecosystems Analysis." Ed. R.H. Waring. Oregon State University Press, Corvallis, Oregon

- Carroll, G.C. 1981. Microbial productivity on aerial plant surfaces. pp. 15-46  
*In: "Microbial Ecology of the Phylloplane."* Ed. J.P. Blakeman. Academic Press, London.
- Carroll, G.C. 1981. Mycological inputs to ecosystem analysis. pp. 25-35 *In: "The Fungal Community: its Organization and Role in the Ecosystem."* Eds. D. Wicklow and G. Carroll. Marcel Dekker, Inc. New York.
- Carroll, G.C. 1986. The biology of endophytism in plants with particular reference to woody perennials. pp.205-222. *In: "Microbiology of the Phylloplane"*. Eds. N.J. Fokkema and J. van den Heuvel. Cambridge University Press, Cambridge.
- Carroll, G.C. 1988. Fungal endophytes in stems and leaves: from latent pathogen to mutualistic symbiont. *Ecology* **69**:2-9.
- Carroll, G.C. 1990. Fungal endophytes in vascular plants: mycological research opportunities in Japan. *Transactions of the Mycological Society of Japan* **31**:102-116.
- Carroll, G.C. 1991. Fungal associates of woody plants as insect antagonists in leaves and stems. *In: "Microbial Mediation of Plant-Herbivore Interactions"*. Eds. P. Barbosa, V.A. Krischik, and C.G. Jones. Wiley and Sons, New York, N.Y., pp. 253-271.
- Carroll, G.C. 1991. Beyond pest deterrence - alternate strategies and hidden costs of endophytic mutualisms in vascular plants. *In: "Microbial Ecology of Leaves."* Eds. J.A. Andrews and S.S. Hirano. Springer Verlag, New York, N.Y., pp. 358-375.
- Carroll, G.C. 1992. Fungal Mutualism. *In: "The Fungal Community: its Organization and Role in the Ecosystem, 2nd Edition."* Marcel Dekker, Inc., New York, N.Y., pp. 327-354.
- Carroll, G.C. 1995. Forest endophytes: pattern and process. *Canadian Journal of Botany (Suppl. 1)*: S1316-S1324.
- Stone, J.K., Sherwood, M.A., and G.C. Carroll. 1996. Canopy microfungi: function and diversity. *Northwest Science* .70:37-45.
- Carroll, G.C. 1997. Fungus/Plant Interactions - An Overview. In "The Mycota, Vol 5A." Eds. G.C. Carroll and P. Tudzynski. Springer Verlag, Berlin, pp. 1-8.

#### EDITED BOOKS

- Wicklow, D.T. and G.C. Carroll (Eds.). 1981. *The Fungal Community: its Organization and Role in the Ecosystem*. Marcel Dekker, Inc., New York.
- Carroll, G.C. and D.T. Wicklow (Eds.). 1992. *The Fungal Community: its Organization and Role in the Ecosystem, 2nd Edition*. Marcel Dekker, Inc., New York.
- Carroll, G.C. and P. Tudzynski (Eds.). 1997. *The Mycota, Vols. 5A and 5B. Fungal-Plant Interactions*. Springer Verlag, Berlin

#### **Teaching experience:**

##### LAST FIVE YEARS

- Bi 225 Genetics and Evolution Laboratories (4 three-hr labs/week)  
 Bi 432 Introductory Mycology (3 lectures, 2 three-hr labs/week)  
 Bi 442 Plant systematics (3 lectures, 2 three-hr labs/week)

##### OTHER COURSES TAUGHT DURING CAREER

Systematic Botany (for Biology Majors)  
Biology and Classification of Ornamental Plants (for Landscape Architects)  
Fungi and Humanity (for Non-majors)  
The Biology of Common and Useful Plants (for Non-majors)  
Plagues and Blights (Freshman seminar)  
The Biological Goldrush (Freshman seminar)  
Microbial Ecology (for Biology Majors)  
Forest Biology (for Biology Majors and Non-majors)

### **Professional Service**

(MSA = Mycological Society of America; NSF = National Science Foundation)

MSA Council, 1975-1977

Ascomycete Workshop prior to MSA meetings, 1975

Program Committee, 2nd International Mycological Congress, 1975-1977

MSA Sustaining Membership Committee, 1977-1978

Program Chair, 1991 MSA annual meetings

Chair (and auctioneer), MSA Endowment Committee, 1991-1995

MSA Council, 1997-2001

### **President, Mycological Society of America, 1998-1999**

MSA Committee on Honorary Membership, 1999-2004

MSA Nominating Committee, 2000 - present

Associate Editor for Mycologia, 1993-1994

Associate Editor, Mycoscience (Japan), 1996-present

Executive Board, International Mycological Association, 1990-1994

Co-organizer post-IMC5 field trip/workshop "Fungi and Forests", summer, 1994

Program Committee for Phyllosphere meetings, 1985 and 1990

NSF Graduate Fellowship Panels, 1987-1988

NSF US/Japan Panel, 1991

NSF Dissertation Improvement Panel, 1998

### **Awards**

Mycological Society of America William H. Weston award for excellence in teaching, 1995.

Biology Department Teaching Award, University of Oregon  
June, 2002

Research Seminars and Talks: (last 5 years)

Presidential Address, Mycological Society of America, St. Louis, MO, August, 1999

Invited speaker, symposium on In Vitro Culture Of Flowering Plants In The Field. Society for In Vitro Biology, San Diego, CA, May, 2000

Invited speaker, meeting on Plant Endophytes, Piracicaba, BRAZIL, October, 2000. Two presentations, a general one on plant endophytes and a more focused discussion on *Guignardia citricarpa*, causative agent of Citrus blackspot.

Invited speaker, International MoldDog Association, IAQA Meetings, Chicago, November, 2003