

Society for the Study of
Evolution

Durham, New Hampshire
June 22-25, 1986

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SCHEDULE OF EVENTS

SUNDAY, JUNE 22

SSE Council Meeting	3:00	206 McConnell Hall
Registration	6:00-10:00	Granite State Room, Memorial Union Building
Reception	7:00-10:00	Granite State Room, Memorial Union Building

MONDAY, JUNE 23

Registration	8:00-10:00	Outside Room 135, Spaulding Life Science Building
Symposium: The Effect of Heterozygosity on Fitness	8:30	Room 135, Spaulding Life Science Building

Contributed Papers Sessions 1:00-5:20

Population Genetics
Evolutionary Genetics/Phylogenies
Organelle DNA
Molecular Evolution/Biochemical
Genetics
Speciation/Mate Choice
Quantitative Genetics/Evolution
and Development
Evolutionary Ecology/Life History
Plant Population Biology

204 Horton
201 Horton
207 Horton

217 Horton
212 McConnell Hall

201 McConnell Hall
210 McConnell Hall
204 McConnell Hall

Poster Session 1:00-5:00 217a McConnell Hall

Cash Bar 5:30-6:30 New England Center
Dining Room

Banquet 6:30-8:00 New England Center
Dining Room

SSE Presidential Address.
BERYL SIMPSON: Factors
Influencing the Development
of the High Andean Flora 8:00 New England Center
Dining Room

TUESDAY, JUNE 24

Workshop on Computer Programs
for Inferring Phylogenies 8:30 Room 135, Spaulding
Life Science Building

SSE Business Meeting 12:30 Huddleston Dining Hall

Contributed Paper Sessions 1:00-5:20

Evolutionary Genetics/Population
Structure
Molecular Evolution
Heterozygosity
Evolutionary Genetics
Evolutionary Ecology/Selection
Morphology/Macroeolution/
Evolutionary Ecology
Plant Population Biology
Plant Reproductive Biology/
Pollination Ecology

201 Horton
204 Horton
207 Horton
217 Horton
212 McConnell Hall

204 McConnell Hall
201 McConnell Hall

210 McConnell Hall

Informal Workshop on the
Effect of Heterozygosity on Fitness 8:00

204 McConnell Hall

WEDNESDAY, JUNE 25

Symposium: Fossil Vertebrates,
Evolutionary Rates and Taxon
Packing within Guilds 8:30

Room 135, Spaulding
Life Science Building

Monday Morning
Room 135, Spaulding Life Science Building

THE EFFECT OF HETEROZYGOSITY ON FITNESS

Organizer: RICHARD K. KOEHN

- 8:30 Welcome, GORDON A. HAALAND, President, University of New Hampshire.
KOEHN, R.K. SUNY, Stony Brook.
Introductory Remarks.
- 8:45 ZOUROUS, E. Dalhousie University.
Growth rate and heterozygosity in marine bivalves: the implications of true versus associative overdominance.
- 9:25 SMOUSE, P.E. University of Michigan.
The fitness consequences of multiple locus heterozygosity.
- 10:05 Break
- 10:20 VRIJENHOEK, R.C. Rutgers University.
Single and multilocus factors affecting survival and population dynamics in Poeciliopsis.
- 11:00 ALLENDORF, F.W. University of Montana.
Effects of heterozygosity on development and rate of oxygen consumption in rainbow trout.
- 11:40 BAYNE, B.L. Institute for Marine Environmental Research, Plymouth.
The effects of protein turnover on heterozygosity-correlated growth.

Monday Afternoon
204 Horton

POPULATION GENETICS

Session Leader: S. SKINNER

- 1:00 MARK, G. Los Alamos National Laboratory.
A Darwinian computer program.
- 1:20 BOYER, J.F. and READ, A. Union College.
Computer simulation of a two-species single-locus model for niche displacement.
- 1:40 ASMUSSEN, M.A. and ARNOLD, J. University of Georgia.
Measures of nuclear-cytoplasmic interactions.
- 2:00 ARNOLD, J. and ASMUSSEN, A. University of Georgia.
Nuclear-cytoplasmic interactions in hybrid zones.
- 2:20 BROOKS, L.D. North Carolina State University.
The amount of variation maintained by frequency dependent selection.
- 2:40 SKINNER, S. University of Chicago.
Population structure affects the evolution of a host-parasite interaction.
- 3:00 Break
- 3:20 EBBERT, M.A. Yale University.
Population studies on the fitness of two Drosophila species hosting spiroplasma endosymbionts.
- 3:40 BROWN, C., C. WILLIAMS, J. ARNOLD and W. ANDERSON. University of Georgia.
Density-dependent viabilities of Drosophila pseudoobscura karyotypes.
- 4:00 FERRARI, J.A. University of Notre Dame.
The effects of gene arrangements on development and homeostasis in Drosophila melanogaster.
- 4:20 CLARK, A. Penn State University.
Variation in Y chromosome segregation in Drosophila melanogaster.
- 4:40 BRETT, B.L.H. and U. MUR. University of Rochester.
The effect of B chromosomes with meiotic drive on development in mealy bugs, Pseudococcus affinis.

Monday Afternoon
201 Horton

EVOLUTIONARY GENETICS/PHYLOGENIES

Session Leader: R.D. WARD

- 1:00 ROSOVSKY, J. University of Vermont.
Electrophoretic and karyotypic comparison of three Reithrodontomys species.
- 1:20 WERBITSKY, D. University of Vermont.
The genetics of Megadontomys and Megadontomys' relation to other peromyscines.
- 1:40 MCDONALD, M. Savannah River Ecology Laboratory and University of Florida.
The relationship of morphology and genetics in Hispaniolan palm tanagers, genus Phaenicophilus.
- 2:00 WARD, R.D. University of Windsor.
Biochemical systematics of the Littorina saxatilis complex (Mollusca: Gastropoda).
- 2:20 FELSENSTEIN, J. University of Washington.
A simulation check of bootstrap confidence limits on phylogenies.
- 2:40 MILLER, J.Y. University of Florida.
The phylogenetic relationships and zoogeography of the neotropical Castniinae (Lepidoptera: Castniidae).

Monday Afternoon
207 Horton

ORGANELLE DNA

Session Leader: D. RAND

- 1:00 HALE, L.R. and R.S. SINGH. McMaster University.
Nuclear and extranuclear genetic differentiation of natural populations of Drosophila melanogaster.
- 1:20 HONEYCUTT, R.L., K. NELSON and E. NEVO. Harvard University.
Mitochondrial DNA variation in mole rats of the Spalax ehrenbergi species complex.
- 1:40 PLANTE, Y. and P.T. BOAG. Queen's University.
Nondestructive sampling of mitochondrial DNA in small mammals.
- 2:00 NEALE, D.B. University of California, Davis.
Population diversity in chloroplast DNA of wild barley Hordeum spontaneum and cultivated barleys of the section Cerealina.
- 2:20 GONZALEZ-VILLASENOR, L.I. and D.A. POWERS. Johns Hopkins University.
Mitochondrial DNA restriction site polymorphisms in populations of the teleost Fundulus heteroclitus.
- 2:40 PALUMBI, S.R. University of Hawaii.
Mitochondrial DNA and the population genetics of sea urchins.
- 3:00 Break
- 3:20 CHAPMAN, R.W. Johns Hopkins University.
Mitochondrial DNA variation in the genus Morone: evidence for regulatory gene differences?
- 3:40 BIRKY, C.W., JR., T. MARUYAMA and P. FUERST. Ohio State University and National Institute of Genetics, Japan.
General theory of the effects of population subdivision, extinction, and recolonization on genetic diversity in mitochondria and chloroplasts.
- 4:00 MORITZ, C. and W. BROWN. University of Michigan.
Evolution of length variation in Cnemidophorus mtDNA: continuous variation and duplications.
- 4:20 RAND, D.M. Yale University.
Foolish DNA in the mitochondrial genome? Tandem repeats, heteroplasmy and organelle transmission in crickets.
- 4:40 MACRAE, A.F. and W.W. ANDERSON. University of Georgia.
Preliminary evidence for natural selection affecting mitochondrial genotypes.

Monday Afternoon
217 Horton

MOLECULAR EVOLUTION/BIOCHEMICAL GENETICS

Session Leader: S.W. SCHAEFFER

- 1:00 CSINK, A.K. University of Georgia.
Variation in copia element copy number and transcriptional activity among natural populations of D. melanogaster.
- 1:20 HALL, J.G. and C. WILLS. University of California, San Diego.
Temperature-conditional overdominance in allyl alcohol resistance involving functional mutants at an alcohol dehydrogenase locus in yeast.
- 1:40 PLACE, A.R. University of Pennsylvania.
Drosophila alcohol dehydrogenase: a case for convergent evolution of a common active site.
- 2:00 SCHAEFFER, S.W. Harvard University.
Nucleotide sequence evolution at the Adh locus for members of the obscura group of Drosophila.
- 2:20 EANES, W.F. SUNY, Stony Brook.
Restriction site and insertion-deletion polymorphisms associated with the G6PD variants in Drosophila melanogaster.
- 2:40 BEVERLEY, S.M. and D. MCMAHON-PRATT. Harvard Medical School.
Evolution of nuclear DNA in protozoan parasites of the genus Leishmania.
- 3:00 Break
- 3:20 FOLTZ, D.W. Louisiana State University.
Null alleles as a possible cause of heterozygote deficiencies in oysters and other bivalves.
- 3:40 DIEHL, W.J., P.J.N. SILVA, M. SANTOS, E. WINSELL and R.K. KOEHN. SUNY, Stony Brook.
Apparent balancing selection at the glucose-phosphate isomerase locus in Mytilus edulis.
- 4:00 RITTE, U. and D. LAVEE. Hebrew University.
The adaptive significance of heterozygotes for PHI in 2 Red Sea mytilids.
- 4:20 FISHER, K.J. Savannah River Ecology Laboratory.
Selection for biochemical variants in two populations of mosquitofish.
- 4:40 ROPSON, I.J. and D.A. POWERS. Johns Hopkins University.
Functional differences between allelic isozymes of H6PDH from Fundulus heteroclitus.
- 5:00 WHITE, M.W. Ohio University.
Allozyme thermostability comparisons: much ado about nothing?

Monday Afternoon
212 McConnell

SPECIATION/MATE CHOICE

Session Leader: C.S. HENRY

- 1:00 SCHWARTZ, J. University of Connecticut.
The function of call alternation in anuran amphibians: a test of three hypotheses.
- 1:20 KOEPFER, H.R. Queens College of CUNY.
Sexual isolation between geographic forms of Drosophila mojavensis.
- 1:40 RINGO, J. and H. DOWSE. University of Maine.
Another look at asymmetrical sexual isolation.
- 2:00 HOUDE, A.E. University of Maryland.
Genetic differences in female choice behavior between populations of the guppy (Poecilia reticulata).
- 2:20 HENRY, C.S. University of Connecticut.
The origin of cryptic species in lacewings: an abdominal mystery.
- 2:40 KOCHMER, J. Yale University.
Allopatric differentiation and subsequent reinforcement of reproductive isolation in the soldier beetle, Chauliognathus pennsylvanicus.
- 3:00 Break
- 3:20 DOWLING, T.E. University of Michigan.
Test of reciprocity of hybridization between sibling species of cyprinid fishes.
- 3:40 SHAW, D. Australian National University.
Estimating the genic and chromosomal components of reproductive isolation within and between subspecies of Caledia captiva (F.).
- 4:00 SAGE, R.D. University of California, Berkeley.
Parasitism and sterility genes in hybridizing house mice.
- 4:20 BERT, T.M. Florida Department of Natural Resources.
Speciation in western Atlantic stone crabs (genus Menippe): the role of geological processes and climatic events in the formation and distribution of species.
- 4:40 FLEISCHER, R.C. and S.I. ROTHSTEIN. University of Hawaii and University of California, Santa Barbara.
Clinal variation and hybridization between two subspecies of the brown-headed cowbird.
- 5:00 DILLON, R.T., JR. College of Charleston.
"Degree of speciation" estimated using artificial introductions and isozyme markers.

Monday Afternoon
201 McConnell

QUANTITATIVE GENETICS/EVOLUTION AND DEVELOPMENT

Session Leader: N.W. BLACKSTONE

- 1:00 ABUGOV, R. Northwestern University.
A quantitative genetic theory for sex specific development and life history.
- 1:20 CHEVERUD, J.M. Northwestern University.
A comparison of genetic and phenotypic correlations.
- 1:40 WILKINSON, G.S., K. FOWLER and L. PARTRIDGE. University of Colorado.
Stability of genetic correlations under selection.
- 2:00 VIA, S. University of Iowa.
Genotype-environment interaction and the potential for evolution in novel environments: experimental studies of *Tribolium*.
- 2:20 RICHTSMEIER, J.T. and J.M. CHEVERUD. Northwestern University.
Ontogenetic scaling in crania using finite element methods: relationships among macaques.
- 2:40 RISKA, B. University of Wisconsin.
Relative brain size, life history, and evolution of body size in placental mammals.
- 3:00 Break
- 3:20 KNOX, K.L., J.M. CHEVERUD, W. LEUTENEGER and M. DOW. Northwestern University.
Phylogenetic autocorrelation of life history traits in primates.
- 3:40 MORENO, G. SUNY, Stony Brook.
Limited phenotypic variation in a vestigial structure.
- 4:00 BLACKSTONE, N.W. Academy of Natural Sciences of Philadelphia.
Variation of cheliped allometry in a hermit crab: the role of introduced periwinkle shells.
- 4:20 HARRIS, R.N. Duke University.
Paedomorphosis in the salamander *Notophthalmus viridescens*: a selection experiment.
- 4:40 MEYER, A. University of California, Berkeley.
Phenotypic plasticity and heterochrony in *Cichlasoma managuense* (Pisces: Cichlidae): implications for speciation in cichlid fishes.

Monday Afternoon
210 McConnell

EVOLUTIONARY ECOLOGY/LIFE HISTORY

Session Leader: D. REZNICK

- 1:00 HUTCHINSON, E.W. Dalhousie University.
Genetic basis of evolutionarily postponed senescence in *Drosophila*.
- 1:20 MUELLER, L.D. Washington State University.
The evolution of semelparity in laboratory populations of *Drosophila*.
- 1:40 ETGES, W.J. University of Arizona.
Adult longevity extension by atmospheric ethanol in *Drosophila mojavensis*: metabolic slowdown or ethanol as a nutrient?
- 2:00 MEIKLE, D. Indiana University.
Lifetime reproduction of male and female rhesus monkeys.
- 2:20 STEARNS, S.C. University of Basel.
The evolution of phenotypic plasticity for life-history traits.
- 2:40 ZERA, A.J. University of Texas.
Wing polymorphism in *Gryllus rubens*: hormonal control of a developmental/life history polymorphism.
- 3:00 Break
- 3:20 GROETERS, F.R. University of California, Davis.
Genetic variation and developmental plasticity in life history characters: response to photoperiod and temperature in populations of the milkweed bug, *Oncopeltus fasciatus*.
- 3:40 LANDA, K. University of Michigan.
Seasonal variation in grasshopper life history traits.
- 4:00 RODERICK, G.K. University of California, Berkeley.
Genetic correlations in dispersal and life history traits: responses to density in a planthopper.
- 4:20 REZNICK, D. University of California, Riverside.
Life history evolution in guppies: evidence from field experiments.
- 4:40 JOHNSON, S.G. and R.F. JOHNSTON. University of Kansas.
Evolutionary importance of interclutch interval in feral pigeons, *Columba livia*.
- 5:00 PIERCE, B.A. Baylor University.
Geographic variation in larval and embryonic acid tolerance of wood frogs (*Rana sylvatica*) from Connecticut.

Monday Afternoon
204 McConnell

PLANT POPULATION BIOLOGY

Session Leader: S.G. WELLER

- 1:00 WEEDEN, N.F. Cornell University.
Are cryptic rearrangements of chromosomes the cause of hybrid breakdown in Cucurbita.
- 1:20 HEYWOOD, J.S. University of Miami.
Clinal variation across edaphic ecotones in populations of the annual plant Gaillardia pulchella.
- 1:40 HAMRICK, J.L. and M.D. LOVELESS. University of Georgia.
The distribution of genetic variation in a tropical shrub: Swartzia simplex var. ochracea.
- 2:00 KARRON, J.D. University of Colorado.
A comparison of genetic structure and breeding systems in geographically restricted and widespread Astragalus species.
- 2:20 FENSTER, C.B. University of Chicago.
Components of gene flow in an annual prairie legume (Cassia fasciculata).
- 2:40 LACEY, E.P. University of North Carolina.
Life cycle correlates of reproductive timing in wild carrot, Daucus carota.
- 3:00 Break
- 3:20 SUN, M. University of British Columbia.
Gynodioecy in Hawaiian Bidens.
- 3:40 WELLER, S.G. and A.K. SAKAI. University of Illinois at Chicago and University of Chicago.
Breeding systems in Schiedea (Caryophyllaceae), an endemic Hawaiian genus.
- 4:00 LOVELESS, M.D. and J.L. HAMRICK. University of Georgia.
Temporal and spatial variation in the mating system of Cirsium pitcheri.
- 4:20 BALL, R.M., JR. University of Georgia.
Sequential sampling plans for estimating plant mating system parameters.

Monday Afternoon
217a McConnell Hall

POSTER SESSION

- ANTLFINGER, A. University of Nebraska, Omaha.
Seed bank size, survivorship and the development of hierarchy in a Nebraska population of Impatiens capensis.
- EVANS, W.L. University of Arkansas, Fayetteville.
Chromosomal anomalies in a wild population of Circotettix rabula (Orthoptera: Acrididae).
- HAZEL, W. Depauw University.
Sex, variability and mimicry in the swallowtail butterfly Papilio polyxenes.
- LEWIS, S.M. Harvard University.
Sexual selection and reproductive behavior in fireflies.
- LINT, D. and J. CLAYTON. University of Manitoba and Canada Department of Fisheries and Oceans.
Evolution of odontocetes: a serum albumin immunological perspective.
- MCCOMMAS, S.A. Harvard Medical School.
Temporal regulation of Tn5 transposition.
- MEIKLE, D. Indiana University.
Secondary sex ratio variation in relation to the Esterase-b locus in Drosophila melanogaster.
- MULVEY, M. Savannah River Ecology Laboratory.
Biochemical genetics and phylogenetic relationships of American and African Biomphalaria (Mollusca: Pulmonata).
- VÄINÖLÄ, R. and RIDDOCH, B.J. University of Helsinki.
Genetic taxonomy and population differentiation of the 'glacial relict' crustacean Mysis relicta in Northern Europe.
- ZIMMER, E., L. SIMS and K. HAMBY. Louisiana State University.
Ribosomal RNA structure and evolution in higher plants.

Tuesday Morning
Room 135, Spaulding Life Science Building

WORKSHOP ON COMPUTER PROGRAMS FOR INFERRING PHYLOGENIES

Organizer: JOSEPH FELSENSTEIN

- 8:30 DAY, W.H.E. Memorial University of Newfoundland.
Optimality and NP-completeness: Grail and reality in phylogenetic inference.
- 9:00 MEACHAM, C. University of California, Berkeley.
Programs for plotting phylogenies and cladograms.
- 9:10 ARCHIE, J. University of Hawaii.
Program for discrete coding of continuous characters.
- 9:20 SWOFFORD, D. Illinois Natural History Survey.
PAUP.
- 9:30 CARPENTER, J. Harvard University.
PHYSYS.
- 9:40 ROHLF, F.J. SUNY, Stony Brook.
NTSYS-PC.
- 9:50 FIALA, K. SUNY, Stony Brook.
PC-CLINCH.
- 10:00 MADDISON, W. Harvard University
MacClade.
- 10:10 FELSENSTEIN, J. University of Washington.
PHYLIP.
- 10:20 Break
- 10:40 Question and Answer Session with a Panel of the Participants.
- 11:30 Simultaneous Informal Demonstrations of the Programs.

Tuesday Afternoon
201 Horton

EVOLUTIONARY GENETICS/POPULATION STRUCTURE

Session Leader: T.P. SNYDER

- 1:00 NELSON, K. and R.L. HONEYCUTT. Harvard University.
Genetic structure of populations of a eusocial mammal, Heterocephalus glaber.
- 1:20 PANZER, H. and C.B. LYNCH. Wesleyan University.
Mitochondrial DNA variation in geographic populations of the house mouse, Mus domesticus.
- 1:40 SNYDER, T.P. and R.D. LARSEN. Michigan Technological University.
Evidence for drift in isolated populations of lake herring as indicated by mitochondrial DNA restriction fragment polymorphism.
- 2:00 MCLELLAN, L.J. Kansas State University.
A morphometric analysis of Peromyscus maniculatus in cultivated and prairie habitats.
- 2:20 ROSE, R.K. and R.D. DUESER. Old Dominion University and University of Virginia.
The recruitment model of small mammal population structure: is it adequate?
- 2:40 HOAGLAND, B. and B. KILPATRICK. University of Vermont.
The role of founder effect in introduced insular mongoose populations.
- 3:00 Break
- 3:20 ROSENBERG, R.H. Cornell University.
The social and genetic organization of populations of an admiral butterfly.
- 3:40 LESSIOS, H. Smithsonian Tropical Research Institute.
Genetic structure of Diadema antillarum three years after its near-extinction.
- 4:00 BURTON, R.S. University of Pennsylvania.
Evolutionary consequences of restricted gene flow in the copepod Tigriopus californicus.
- 4:20 BLOUIN, M.S. and A. KARLIN. Florida State University and University of Arkansas, Little Rock.
Geographic variation in the amount of among-population genetic differentiation in desmognathine salamanders.
- 4:40 DAUGHERTY, C.H. Victoria University.
Conservation genetics in New Zealand.
- 5:00 BRUCK, D. and W. COLON. University of Puerto Rico, Rio Piedras.
Behavioral and morphological comparisons within Drosophila dunni.

Tuesday Afternoon
204 Horton

MOLECULAR EVOLUTION

Session Leader: A. CACCONI

- 1:00 LOVE, M.L. University of Toronto.
Changes in amino acid recognition by tryptophanyl-tRNA synthetase during directed evolution in tryptophan analogue utilization in Bacillus subtilis.
- 1:20 PIÑERO, D., M.A. CEVALLOS and R. PALACIOS. University of Mexico.
A method to evaluate the role of horizontal transmission in bacterial evolution.
- 1:40 CACCONI, A. Yale University and II Università di Roma.
Remarkably rapid genetic divergence within and among species of North American cave-cricket: evidence from isozymes and DNA-DNA hybridization.
- 2:00 ANDERSON, C. Yale University.
Fruitflies are not birds: DNA-DNA hybridization evidence from the Drosophila willistoni species group.
- 2:20 WHEELER, W.C. Harvard University.
Molecular covariance in ribosomal RNAs: evolutionary and phylogenetic implications.
- 2:40 MAXSON, L. and R. MAXSON. University of Illinois.
Micro-complement fixation: an exposé.
- 3:00 Break
- 3:20 SAMMONS, S., J.F. McDONALD and J. ARNOLD. University of Georgia.
Products of the oncogenes myc and myb are homologous with the homeo domain.
- 3:40 SAMPSELL, B., B. WESTROPE, T. JOHNSON and A. GARDNER. State University College at Buffalo.
Factors contributing to phenotypic variation in major urinary proteins of the mouse.
- 4:00 SAMOLLOW, P.B. Southwest Foundation for Biomedical Research.
The phylogeny of X-chromosome inactivation: evidence from Gpd and Pek-A expression in the Virginia opossum.
- 4:20 FANNING, T. National Cancer Institute.
Evolution of repetitive DNA sequences in carnivores.
- 4:40 MODI, W., W.G. NASH, Y.-I. MIYAKI and S.J. OBRIEN. National Cancer Institute.
Comparative cytogenetic analyses of the Felidae (Mammalia: Carnivora).
- 5:00 BLACK, W.C. IV. University of Notre Dame.
Genome organization in mosquitoes.

Tuesday Afternoon
207 Horton

HETEROZYGOSITY

Session Leader: J.M. NOVAK

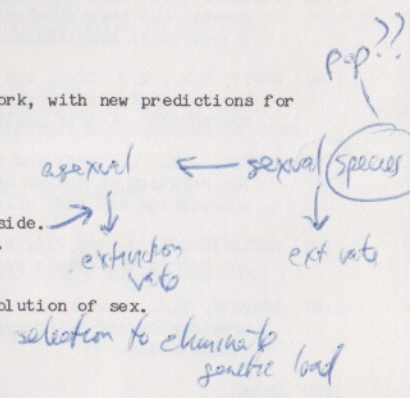
- 1:00 HOULE, D. SUNY, Stony Brook.
Allozyme heterozygosity, growth rate, and homeostasis in Drosophila melanogaster.
- 1:20 VOLCKAERT, F. Dalhousie University.
Genetic and physiological correlates of growth in deep-sea scallops (Placopecten magellanicus).
- 1:40 SCOTT, T.M., W.J. DIEHL and R.K. KOEHN. SUNY, Stony Brook.
The relationship of heterozygosity and shell length observed in the highly polymorphic bivalve Mulinia lateralis.
- 2:00 MITTON, J.B., C. CAREY and T.D. KOCHER. University of Colorado.
The relation of enzyme heterozygosity to standard and active oxygen consumption and body size of tiger salamanders.
- 2:20 WETHERINGTON, J. and R.C. VRLJENHOEK. Rutgers University.
Are hybrid all-female species heterotic?
- 2:40 SCHULTZ, R.J. University of Connecticut.
Growth rate and heterozygosity among clonal fishes in the genus Poeciliopsis.
- 3:00 Break
- 3:20 POWERS, D.A. and L. DIMICHALE. The Johns Hopkins University.
Physiological and biochemical bases of heterozygosity: facts and fictions.
- 3:40 RHODES, O.E., JR. and J.M. NOVAK. Savannah River Ecology Laboratory.
Age-specific heterozygosity shifts and selection in white-tailed deer.
- 4:00 LEBERG, P.L. Savannah River Ecology Laboratory.
Heterozygosity and white-tailed deer growth.
- 4:20 SMITH, M.H. and K.T. SCRIBNER. Savannah River Ecology Laboratory.
Antler development and heterozygosity in white-tailed deer.
- 4:40 NOVAK, J.M. Savannah River Ecology Laboratory.
Heterozygosity and geographic range within the Rodentia: a test of an hypothesis.
- 5:00 DRYSDALE, T.A. University of Guelph.
Indian and african elephants: heterozygous large mammals which are surprisingly closely related.

Tuesday Afternoon
217 Horton

EVOLUTIONARY GENETICS

Session Leader: K. GODDARD

- 1:00 TESKA, W.R., M.H. SMITH and J.M. NOVAK. Savannah River Ecology Laboratory.
Effects of food quality and heterozygosity upon fitness of Peromyscus polionotus.
- 1:20 SNYDER, L.E. University of Vermont.
Polydomy in a North-eastern woodland ant.
- 1:40 FRANK, S.A. University of Michigan.
Sex allocation theory: an expanded framework, with new predictions for mammals and wasps.
- 2:00 WERREN, J.H. University of Rochester.
Selfish genes and sex ratios.
- 2:20 NUNNEY, L. University of California, Riverside.
The maintenance of sex by group selection.
- 2:40 CHAO, L. Northwestern University.
Muller's Ratchet, RNA viruses, and the evolution of sex.
- 3:00 Break
- 3:20 JAENIKE, J. University of Rochester.
Inheritance of oviposition-site preference in Drosophila tripunctata.
- 3:40 EVANS, R. University of Massachusetts.
Niche expansion in E. coli: infectious gene exchange and the rate of evolution.
- 4:00 DAWLEY, R.M. Cornell University.
Unisexual hybrids in the genus Phoxinus: diploids, triploids, and diploid/triploid mosaics.
- 4:20 GODDARD, K. University of Connecticut.
Reproductive modes of unisexual hybrid fishes in the genus Phoxinus.
- 4:40 INNES, D.J. University of Windsor.
The genetic basis of obligate parthenogenesis in Daphnia pulex.
- 5:00 BROWN, R.A. Wake Forest University.
Clonal diversity and parthenogenesis in the brine shrimp, Artemia.



Tuesday Afternoon
212 McConnell

EVOLUTIONARY ECOLOGY/SELECTION

Session Leader: J. CONNER

- 1:00 YOSHIMURA, J. and W.M. SHIELDS. SUNY, Syracuse.
Probabilistic optimization of phenotype distributions: a general solution for the effects of uncertainty on natural selection?
- 1:20 GROSBERG, R.K. University of California, Davis.
Philopatry and kin recognition in a colonial marine invertebrate: some effects on fitness.
- 1:40 KIRKPATRICK, M., T. PRICE and S.J. ARNOLD. University of Texas, University of Houston and University of Chicago.
The Darwin-Fisher theory of sexual selection in monogamous birds.
- 2:00 RESSEL, S. University of Vermont.
Malarial infection and sexual selection in the western fence lizard Sceloporus occidentalis.
- 2:20 SULLIVAN, J.D. University of Maryland.
Offspring sex ratio and the reproductive success of male nest guards in the solitary wasp, Trypoxylon lactitarse.
- 2:40 COLWELL, R.K. University of California, Berkeley.
Sexual selection for monophagy in arthropods: meet me in Cephaelis.
- 3:00 Break
- 3:20 CONNER, J. Cornell University.
Measuring selection in a natural population of the fungus beetle, Bolitotherus cornutus.
- 3:40 FUTUYMA, D.J. SUNY, Stony Brook.
Genetic covariation in responses to host plants in the fall cankerworm Alsophila pomataria (Lepidoptera: Geometridae).
- 4:00 FRY, J.D. University of Michigan.
Host plant adaptation in a laboratory population of the phytophagous mite Tetranychus urticae Koch.
- 4:20 OTT, J.R. and M. LAMPO.. University of Maryland and Universidad Central De Venezuela.
Natural selection for small body size in Acanthoscelides alboscuteallatus (Coleoptera: Bruchidae) imposed by the constraints of its host plant Ludwigia alternifolia (Onagraceae).

Tuesday Afternoon
204 McConnell

MORPHOLOGY/MACROEVOLUTION/EVOLUTIONARY ECOLOGY

Session Leader: C.R. CRUMLY

- 1:00 BARNES, P.T. Connecticut College.
Adaptive significance of wing size/shape variation in Drosophila:
relationship between wingloading and power output during tethered flight.
- 1:20 WIERNASZ, D.C. and J.G. KINGSOLVER. Brown University.
Adaptive aspects of phenotypic covariation in melanization pattern of Pieris
butterflies.
- 1:40 TARSITANO, S. Queens College of CUNY.
Biological constraints and the evolution of temporal fenestrae.
- 2:00 LABANDEIRA, C.C. University of Chicago.
A phenetic classification of recent insect mouthparts: correlations with
dietary strategies and implications for macromorphological evolution.
- 2:20 SORHANNUS, U. Queens College of CUNY.
Cladogenetic changes in the morphology of Rhizosolenia traeborgonii.
- 2:40 CRUMLY, C.R. Harvard University.
Patterns of digital and phalangeal loss in land tortoises (Family
Testudinidae): an example of the phyletic history of developmentally
controlled loss.
- 3:00 Break
- 3:20 JACOBS, D.K. Virginia Polytechnic Institute.
Homeotic complexes and segment specification in Arthropod evolution.
- 3:40 HECHT, M.K. Queens College of CUNY.
Another example of the Lazarus effect.
- 4:00 BOYAJIAN, G. University of Chicago.
Declining background extinction rate through the Phanerozoic - a consequence
of an aging fauna.
- 4:20 MINKOFF, E.C. Bates College.
Does widespread extinction precede or follow increased speciation? A
computer simulation of phylogenetic trees.
- 4:40 MAYER, G.C. Harvard University.
Convergent morphological evolution in West Indian Anolis communities.
- 5:00 BOWSER, G. University of Vermont.
Population biology of an isolated community of Lepidoptera in Northwestern
Wyoming.

Tuesday Afternoon
201 McConnell

PLANT POPULATION BIOLOGY

Session Leader: S. MAZER

- 1:00 WILLIS, J.H. and J. SCHMITT. University of Chicago and Brown University.
Genetic variation for phenotypic plasticity in Anthoxanthum odoratum.
- 1:20 MADDOX, D. and N. CAPPUCCINO. Cornell University.
The expression of genetic variation in goldenrod resistance to aphids
depends on environmental context.
- 1:40 GARBUTT, K. Harvard University.
Cross environmental genetic correlation and the maintenance of genetic
variability in a population of Abutilon theophrasti.
- 2:00 MEAGHER, T.R. Duke University.
A genetic analysis of sexual dimorphism in Silene alba.
- 2:20 STRATTON, D. SUNY, Stony Brook.
Genotypic diversity of the asexual plant Erigeron annuus in relation to
habitat heterogeneity and geography.
- 2:40 MAZER, S. University of California, Davis.
The genetic basis of seed size in wild radish: ecological and evolutionary
consequences.
- 3:00 Break
- 3:20 JANSON, C. SUNY, Stony Brook.
Phylogeny versus adaptation in the evolution of fruit morphology.
- 3:40 GUREVITCH, J. SUNY, Stony Brook.
The adaptive significance of physiological and morphological variation among
populations of Achillea millefolium.
- 4:00 SHAW, J. Duke University.
The evolution of heavy metal tolerance in some mosses.
- 4:20 GRANT, M.C. University of Colorado.
Morphological and physiological differentiation in ponderosa pine --
patterns spanning 14 orders of magnitude.
- 4:40 MCKNIGHT, K.B. St. Lawrence University.
The adaptive morphology of mushroom sporocarps with respect to water stress.

Tuesday Afternoon
210 McConnell

PLANT REPRODUCTIVE BIOLOGY/POLLINATION ECOLOGY

Session Leader: Y.B. LINHART

- 1:00 SKINNER, M.W. Harvard University.
Evolution of pollination syndromes in California's true lilies: floral anatomy plays a predominant role.
- 1:20 SORK, V. University of Chicago.
Effects of single and multiple donor pollen loads on fruit abortion, seed weight, and germination in partridge pea (*Chamaecrista fasciculata*).
- 1:40 STEPHENSON, A.G. Pennsylvania State University.
The effects of pollen competition extend into the second generation.
- 2:00 THOMSON, J.D. and L.D. HARDER. SUNY, Stony Brook.
Fates of pollen grains undergoing transport by bees: implications for male function.
- 2:20 SCHOEN, D.J. McGill University.
Male reproductive investment and male reproductive success in white spruce.
- 2:40 WALLER, D. University of Wisconsin.
Are outcrossed mates related? Estimates from *Impatiens capensis*.
- 3:00 Break
- 3:20 SCHMITT, J. Brown University.
A test of the sib competition hypothesis for outcrossing advantage in *Impatiens capensis*.
- 3:40 COUVET, D. University of South Carolina.
Sex allocation of hermaphroditic plants: observations.
- 4:00 LINHART, Y.B. University of Colorado.
Sequential hermaphroditism in ponderosa pine.
- 4:20 DUDASH, M.R. University of Illinois at Chicago.
Relative fitness of selfed and outcrossed progeny in a protandrous species, *Sabatia angularis* L. (Gentianaceae).
- 4:40 DEWEY, S.E. and J.S. HEYWOOD. University of Miami.
Genetic spatial autocorrelation and individual outcrossing rates from a population of *Psychotria nervosa*, a tropical shrub in south Florida.
- 5:00 MOTTEN, A.F. Duke University.
Determinants and consequences of outcrossing in a predominantly self-fertilizing weed, *Datura stramonium*.

Wednesday Morning
Room 135, Spaulding Life Science Building

FOSSIL VERTEBRATES, EVOLUTIONARY RATES, AND TAXON PACKING WITHIN GUILDS

Organizers: R.T. BAKKER, J.M. PARRISH, P. ROBINSON.

- 6:30 BAKKER, R.T. and P. ROBINSON. University of Colorado Museum.
Step-wise evolution in adaptive shape and species clusters in early Eocene mammals.
- 8:50 Discussion
- 9:05 STUCKY, R. and L. KRISTALKA. Carnegie Museum.
Gradual evolution within long lived species lineages of Eocene artiodactyls.
- 9:25 Discussion
- 9:40 KRON, D. and D. PROTHERO. University of Colorado Museum and Occidental College.
Basal bushiness and species stasis in Oligocene land Mammalia.
- 10:00 Discussion
- 10:20 Break
- 10:40 PARRISH, J.M. and S. CHATTERJEE. University of Colorado Museum and Texas Tech University.
Progressive evolution, interactions among higher taxa, and winnowing extinctions among Triassic tetrapods.
- 11:00 Discussion
- 11:15 CARROLL, R.L. and J.A. MASSARE. McGill University and University of Rochester.
Evolutionary rates and guild structure in large marine reptiles.
- 11:35 Discussion