MANUSCRIPT REVIEWERS

VOLUME 105, NUMBERS 1-2 AND 3-4

Rita Barr Peter F. Bellinger Elliott J. Blumenthal Roger F. Boneham Anne Cartwright John S. Castrale

Ken Christiansen James R. Curry Kara W. Eberly Donald P. Franzmeier James R. Gammon Robert D. Hall Uwe J. Hansen Mohinder S. Jarial Richard Jensen Daryl R. Karns Gene Kritsky Paul C. MacMillan Dennis McDonald Paul E. Rothrock Clifford Sadof Thomas P. Simon

Paul M. Stewart Robert Waltz

Melissa A. Warden J. Dan Webster Harmon P. Weeks, Jr. Steve Weller John O. Whitaker, Jr. Purdue University
California State University
IPFW
Indiana University Kokomo
84 Brittany Lane
Indiana Division of Fish
and Wildlife

Grinnell College
Franklin College
Saint Mary's College
Purdue University
DePauw University
IUPUI

Indiana State University Ball State University Saint Mary's College Hanover College

College of Mount St. Joseph Hanover College Hanover College Taylor University

Purdue University
U.S. Environmental Protection
Agency

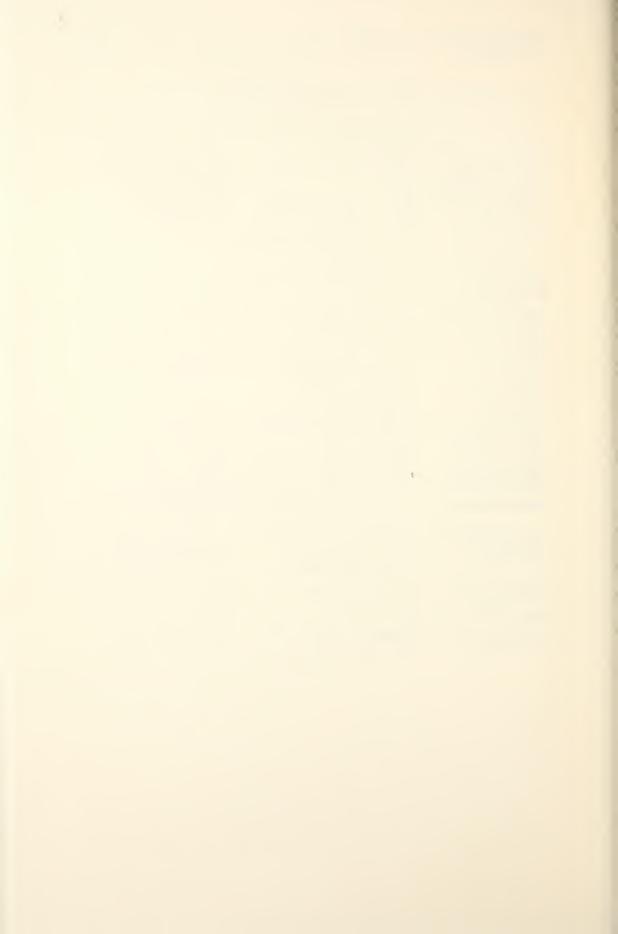
National Biological Survey
Indiana Department of
Natural Resources
Ball State University
Hanover College
Purdue University

Purdue University Indiana State University West Lafayette, Indiana Northridge, California Fort Wayne, Indiana Kokomo, Indiana Fairfield, Ohio Mitchell, Indiana

Grinnell, Iowa Franklin, Indiana Notre Dame, Indiana West Lafavette, Indiana Greencastle, Indiana Indianapolis, Indiana Terre Haute, Indiana Muncie, Indiana Notre Dame, Indiana Hanover, Indiana Cincinnati, Ohio Hanover, Indiana Hanover, Indiana Upland, Indiana West Lafayette, Indiana Chicago, Illinois

Porter, Indiana Indianapolis, Indiana

Muncie, Indiana Hanover, Indiana West Lafayette, Indiana West Lafayette, Indiana Terre Haute, Indiana



INDEX PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE VOLUME 105 (1-2 AND 3-4)

Acer	Autoimmune disease, increased Ia expression
negundo, 162	caused by, 188
nigrum, 162	Avifauna of the Newport Army Ammunition Plant,
saccharinum, 87, 89	Vermillion County, Indiana, 69
saccharum, 159, 160	Avonburg silt loam soil, 160
Acer-Fagus forest in Wabash County, 13	
Acer saccharinum, 89	Balb/c mice, 177
home of a bat maternity colony, 87	Bald eagle, 71, 72
Acer saccharum-Aesculus glabra community, 159	Barn owl
Acer saccharum-Fraxinus americana-Quercus spp. community, 159	at the Newport Army Ammunition Plant, 74 nesting in Indiana, 21
Acer saccharum-Ulmus sppAesculus glabra- Cercis canadensis community, 160	predators of, 26 prey, 21
Additive Effect of Cytokines and Retinoic Acid on	suggestions for protecting, 27
the Growth Inhibition of Transformed Cells,	young per nest, 25
<i>The</i> , 1	Barred owl, 23
Age and reconciliation in Japanese macaques, 273,	Basella alba, 172
274	Basidiomycete spores in indoor school air, 64, 66
Agonistic encounters in Japanese macaques, 269	Basis Functions for Localized Quantum Potentials,
Airborne culturable mold, 61	241
definition of, 62	Basis, orthonormal, 242
effect of ventilation systems on, 65	Basswood, 162, 166
AIDS, 189	Bats
Alfalfa, 169	at Prairie Creek, Vigo County, Indiana, 87
Allium cepa, 169	big brown bat, 87, 91, 277, 278
Alternaria in indoor air, 66	big-eared bat, 278
Ammodiamus henslowii, 74	eastern pipistrelle, 87, 93, 277, 278
Amphibians, 197	evening bat, 87, 89, 278
Anisoptera, 217	gray myotis, 278
Antibodies	hoary bat, 93
anti-IgM, 178	in Clay County, Indiana, 87, 91, 279
anti-Ia ^b , 180	Indiana myotis, 87, 93, 277, 278
anti-Ia ^d , 180	in Parke County, Indiana, 279
anti-Iad antibody D3137, 190, 191	in Pike County, Indiana, 279, 280
anti-L3T4, 178	little brown myotis, 87, 92, 277, 278
Anti-Ia ^b antibodies, 180	northern myotis, 87, 91, 277, 278
Anti-Iad antibodies, 180	red bat, 87, 93
monoclonal antibody D3137, 190, 191	silver-haired bat, 87, 93, 278
Anti-IgM antibodies, 178	southern myotis, 278
Anti-L3T4 antibodies, 178	Bats of Abandoned Coal Mines in Southwestern
Anurans, 197	Indiana, 277
Ash, white, 162, 165	Beaver Island, Michigan, 207
Asio flammeus, 23	fish species found on, 212
Aspergillus in indoor air, 66	limnology of lakes on, 210
Asthma, 61	Beech-maple forest, 208
Attitudinal survey in an undergraduate earth science	Beetle
class, 251	European spruce bark beetle, 225
Aureobasidium in indoor air, 66	pine shoot beetle, 225, 227
Autoimmune antibodies caused by Leishmania	Behforouz, Nancy C., 177
major infections in humans and mice, 178	Behnen, Roxanna, 177

Bell's vireo, 73, 74

Big brown bat, 87, 91, 277, 278

Big-eared bat, 278

Biodiversity, maintenance of regional biodiversity in northeastern Indiana, 11

Birds of the Newport Army Ammunition Plant, Vermillion County, Indiana, 69, 74

Bittern, 74

Black-and-white warbler, 71, 72

Black maple, 162, 163

Black walnut, 163, 165

Blue Creek Coal, 235, 238

Bluegrass Natural Region, 160

Blue grosbeak, 73

Blue stain fungus, 226

Bluffton Till Plain Section in Wabash County, 13

Bonobos, behavior of, 269

Boone, William J., 251

Boxelder, 162, 163

Bray and Curtis similarity index, 161, 164, 168

Brazil Formation, unusual carbonate buildups in the, 233, 234

Briley Chapel, bats at, 87, 91

Brown, Lance, 177

Browner, Carol, EPA Administrator, on

environmental racism, 44

Bubo virginianus, 23, 26

Buckeye, Ohio, 162, 166

Buffaloville Coal, 234, 238

C57B1/6 mice, 177

Canada warbler, 71, 72

Candida albicans, 181, 187, 190

infections in mice, 177

phagocytosis of, 184, 190

Candidate species (U.S.)

Sistrurus catenatus catenatus (eastern

massasauga), 196, 203

Carbonates in the Mansfield and Brazil Formations, a hypothesis concerning the origin of, 237

Castrale, John S., 21

Cedar swamps, 208

Celithemis monomelaena, 221

Celtis occidentalis, 162

Central Till Plain Natural Region in Wabash

County, Indiana, 13

Chaetomium in indoor air, 66

Chandler, C. Ray, 69

Chandler, Paul, 43

Checklist of Indiana Collembola (Hexapoda), A, 29

Checklist of the birds of the Newport Army

Ammunition Plant, 75

Chimpanzees, behavior of, 269

Chinquapin oak, 162, 163

Chronic allergic rhinitis, 61

Cladosporium in indoor school air, 64, 66

Class II MHC antigens, 178, 191

Clay County

bats in, 279

bats in Briley Chapel, 87, 91

Clinton, President William, on environmental racism, 44

Coal mines, bats of abandoned, 277

Coephloeus pileatus, 87

Collembola (Hexapoda) checklist for Indiana,

29, 31

Columba livia, 23

Community Development Block Grant Program, 45

Constructivist philosophy of teaching, 264

Cooper's hawk, 73

Corchorus olitorius, 170

Cottonwood, 89

home of a bat colony, 87

Cowpea, 169

Crane, Frederick L., 1

Crane, sandhill, 71, 72

Creation of shorelines, undergraduate student interest in the study of, 257

Crypsis in the eastern massasauga (Sistrurus catenatus catenatus), 202

CsA, 177, 178, 184

inhibition of γ -IFN production by, 190

inhibition of IL-2 production by, 190

Curry, James R., 217

Cyclosporin A, 177, 178, 184

inhibition of γ-IFN production by, 190 inhibition of IL-2 production by, 190

Cytokines, 1

D3137 monoclonal antibody, 191

Damselflies, 217

Dearborn channery silt loam soil, 160

Deer mice, 197

Detroit, Michigan, hazardous waste sites in, 45

Dickcissel, 73, 74

Diferric transferrin reductase, 2

Dominance status and reconciliation in Japanese macaques, 273

Dove, rock, 23

Dragonflies of Indiana, 217

Eagle, bald, 71, 72

Earth science class, student evaluation of topics in an undergraduate, 251

Earth science topics of interest to undergraduate students, 265

Eastern deciduous forest

fragmentation characteristics of the, 18

fragmentation in the, 17

Eastern massasauga, 195

bite of, 202

current distribution, 198

factors causing population decline in, 201

hibernation in crayfish burrows, 197

historical range in Indiana, 195, 198 management recommendations for, 204	effect of harvest intervals on the total yield of, 172
possible disjunct populations in Jackson and	deal harvest interval in, 174
Sullivan Counties, 198	mineral concentration in the leaves of, 174
preferred habitats of, 196	Forest fragmentation
robust populations in, 201	characteristics in the eastern deciduous forest,
Eastern pipistrelle, 87, 93, 277, 278	18
Eden-Caneyville complex soils, 160	characteristics in Wabash County, 18
Edge effect, 11, 14	in northeastern Indiana, 11
Eel River Valley in Wabash County, 13	Forest Succession in Happy Valley, Jefferson
Effects of Mixed Fertilizer Levels and Harvest	County, Indiana, 159
Intervals on the Yield and Mineral	Friesea pentacantha, collembolan dropped from
Concentration of the Fluted Pumpkin,	the Indiana checklist, 30
Telfairia occidentalis Hook., 169	Fungus, blue stain, 226
Electron transport system, 6	Fusarium in outdoor air, 66
Elevation in Wabash County, Indiana, 16	
Elm, slippery, 162, 163, 164	Gary landfill not sited in a high minority area,
Endangered species in Indiana	53, 54, 57
evening bat, 278	Gasterosteus aculeatus, 207
gray myotis, 278	Glacial landforms, undergraduate student interest
Indiana myotis, 277, 278	in the study of, 257, 259
Sistrurus catenatus catenatus (eastern	Godish, Diana R., 61
massasauga), 196, 203	Golden monkeys, behavior of, 269
Environmental and Cultural Influences on Forest	Gomphus williamsoni, 221
Fragmentation Patterns in Northeastern	Grasshopper sparrow, 73, 74
Indiana, 11	Grasslands at the Newport Army Ammunition
Environmental Justice: A Case Without Black-and-	Plant, 74
White Answers, 43	Gray myotis, 278
Environmental racism, 43	Great blue heron, 73
defined, 44	Great horned owl, 23, 26
disproved at the Munster landfill, Indiana, 51	Grosbeak, blue, 73
Epicoccum in outdoor air, 66	
Epitheca simulans, 221	Habitat fragmentation in northeastern Indiana, 11
Eptesicus fuscus, 87, 91, 277, 278	Hackberry, 162, 163, 167
European Spruce Bark Beetle (Ips typographus	Happy Valley, Jefferson County, Indiana
(L.)) Interceptions in Indiana 1995, 225	forest composition in 1989, 162, 163, 164
Evening bat, 87, 89, 278	location of, 160
	Harrier, northern, 71, 72, 74
Falco peregrinus, 26	Hart, J.W., 29
Familiarity with a topic as a key to successful	Hartmann, Chad, 241
undergraduate learning, 264	Harvest interval
Feddeler landfill, Lowell, Indiana, 49	ideal interval between harvests in the fluted
Federally listed birds at the Newport Army	pumpkin, 174
Ammunition Plant, 71, 72	its effect on total yield in the fluted pumpkin,
Fertilizer, effect on fresh weight yields in the fluted	172
pumpkin, 172	Hawk
Field Museum of Natural History, collections of the	Cooper's, 73
eastern massasauga (Sistrurus catenatus	sharp-shinned, 71, 72
catenatus) at, 198	HeLa (transformed human cervical) cell line, 2
Fifteen Years of Forest Succession in Happy Valley,	Henslow's sparrow, 74
Jefferson County, Indiana, 159	Hermite Polynomial, 243
Fishes of the Inland Waters of Beaver Island,	Heron, great blue, 73
Charlevoix County, Michigan, 207	Hicks, David J., 11
Fluorescein conjugated F(ab') ₂ rabbit anti-mouse	Hilbert Space, 241
Ig, 180	HL-60 (human promyelocytic leukemic) cell line, 2
Fluted pumpkin, 169	Hoary bat, 93
effect of fertilizer on the fresh weight yields of,	House sparrows, 197
172	Houston Taxas solid wasta sites in 45

Human promyelocytic leukemic (HL-60) cell line, Juglans nigra, 163 Jumping mice, 197 Jute, 170 Hypergammaglobulinemia caused by Leishmania major infections in humans and mice, 178 Hyper-Ia Antigen Expression on Peritoneal Keller, Douglas C., 11 Macrophages Correlates with Severe Kight, Scott L., 269 Leishmania major Infections in Mice, 177 Kingsbury, Bruce A., 195 Hyper-Iad expression in infected Balb/c mice, 181 Kinship and reconciliation in Japanese macaques, Hypersensitivity pneumonitis, 61 273 Hypogastrura Klein, Matthew T., 43 armata, collembolan dropped from the Indiana L3T4⁺ lymphocytes, 177 checklist, 30 palustris, a disjunct collembolan in Indiana, 30 Th1 helper subset, 189 Th2 subset, 189 Labs, the disinterest of undergraduate earth science Ia students toward, 263 antigens, detection of, 179 expression increased by autoimmune disease, Lake County, Indiana human population size in, 46 expression increased by Listeria monocytogenes, income in, 46 racial composition of, 46 188 waste management facility siting in, 44, 47, 48 expression increased in tumor-bearing animals, 189 Landfills γ -IFN (interferon- γ), 1, 189, 190 Feddeler landfill in Lowell, 49 Gary landfill, 53, 54, 57 production inhibited by CsA, 190 J & D landfill in Cedar Lake, 49 secreted by Th1 cells, 189 Igbokwe, J.R., 169 Munster landfill, 49, 50, 51, 56, 57 IL-2 (interleukin-2), 1 off-site, 44 production inhibited by CsA, 190 Lasionycteris noctivagans, 87, 93, 278 secretion by Th1 cells, 189 Lasiurus borealis, 87, 93 IL-4, 190 Leishmania major secretion by Th2 cells, 189 cause of autoimmune antibodies in humans and IL-5, secretion by Th2 cells, 189 mice, 178 Income in Lake County and Indiana, 46 cause of hypergammaglobulinemia in humans Indiana and mice, 178 human population size in, 46 cause of lymphadenopathy in humans and mice, income in, 46 racial composition in, 46 cause of splenomegaly in humans and mice, Indiana Abandoned Mine Land Program, 277, 280 178 Indiana myotis, 87, 93, 277, 278 infections in mice, 177, 179 phagocytosis of, 184, 190 Indianapolis Zoo, Japanese macaques at, 270 Indian spinach, 172 Lemur, behavior of the redfronted, 269 Interferon- γ (γ -IFN), 1, 189, 190 Limnology of the lakes on Beaver Island, production inhibited by CsA, 190 Michigan, 210 secreted by Th1 cells, 189 Liriodendron tulipifera, 167 Interleuken-2 (IL-2), 1 Listeria monocytogenes, 191 International Institute of Tropical Agriculture, 170 Ia expression increased by infection with, 188 Ipomoea reptans, 170 Little brown myotis, 87, 92, 277, 278 Lizard's tail, 89 *Ips* grandicollis, 227, 230 Long-tailed macaque, 270, 274 typographus, 225 Lower Block Coal, 234, 235 Isotomurus palustris, collembolan dropped from Lymphadenopathy, caused by Leishmania major the Indiana checklist, 30 infections in mice and humans, 178 Ivy, poison, 89 Macaques J & D landfill, Cedar Lake, Indiana, 49 Japanese, 269 Jackson County, possible disjunct population of the long-tailed, 270, 274

pigtail, 269, 275

rhesus, 269

eastern massasauga (Sistrurus catenatus

catenatus) in, 198

Japanese macaques, 269

MacMillan, Paul C., 159	Minerals and rocks, undergraduate student interest
Macromia	in the study of the differences between, 259,
georgina, 221	264
wabashensis, 221	Mississinewa Moraine in Wabash County, Indiana,
Macrophages, peritoneal, 177	13
Mansfield Formation, unusual carbonate buildups	MK.D6, monoclonal antibody, 179
in the, 233, 234	Mold
Maple	airborne culturable, 61
black, 162, 163	definition of airborne culturable mold, 62
boxelder, 162, 163	effect of ventilation systems on, 65
silver, 87, 89	Monkeys, behavior of
sugar, 162, 163, 164	golden, 269
Mariah Hill Coal, 235	patas, 269
Marshall, Philip, 177	Monoclonal antibody
Marsh habitats at the Newport Army Ammunion	34-5-3, 180
Plant, 74	D3137, 191
Marsh Lake Fish and Wildlfie Area, the eastern	MK.D6, 179
massasauga (Sistrurus catenatus catenatus)	Montgomery, B. Elwood, 218
in, 201	MLR/1pr autoimmune mice, 190
Marsh wren, 74	Multivesicula harti, reclassified as Tullbergia harti.
Massasauga, eastern	30
bite of, 202	Munster landfill, 49, 50, 56, 57
current distribution, 198	claims of environmental racism disproved at, 51
factors causing population decline in, 201	Murine
hibernation in crayfish burrows, 197	autoimmunity, 178
historical range in Indiana, 195, 198	leishmaniasis, 189
management recommendations for, 204	Muscatatuck Flats and Canyons Section, 160
possible disjunct populations in Jackson and	Myotis
Sullivan Counties, 198	gray, 278
preferred habitats of, 196	Indiana, 87, 93, 277, 278
robust populations in, 201	little brown, 87, 92, 277, 278
Matched control observations, 270	northern, 87, 91, 277, 278
Meadow vole, 24	southern, 278
Medicago sativa, 169	Myotis
Mice	austroriparius, 278
autoimmune antibodies in, 178	grisescens, 278
Balb/c mice, 177	lucifugus, 87, 92, 277, 278
C57B1/6 mice, 177	septentrionalis, 87, 91, 277, 278
deer mice, 197	sodalis, 87, 93, 278
GVHD mice, 191	
hypergammaglobulinemia in, 178	Nesting by Barn Owls in Indiana, 21
jumping mice, 197	Nettle, stinging, 89
Leishmania major infections in, 177	New Jersey, European spruce bark beetle in,
lymphadenopathy in, 178	225, 231
MRL/1pr autoimmune mice, 190	Nigeria, fluted pumpkin as food in, 169
splenomegaly in, 178	Northeastern Region Bark Beetle Initiative,
Microtus	225, 227
ochrogaster, 24	Northern harrier, 71, 72, 74
pennsylvanicus, 24	Northern Lakes Natural Region in Wabash County,
prey of the eastern massasauga, 197	13
primary prey of the barn owl, 21	Northern myotis, 87, 277, 278
Migration (plant) impeded in northeastern Indiana,	Norway spruce, 227
11	Numerov Technique, 246
Mineral concentration in the leaves of the fluted	Nycticeius humeralis, 87, 89, 278
pumpkin, 174	
Mineral resources, undergraduate interest in the	Oak
study of, 257	chinquapin, 162, 163
	red, 162, 163, 167

swamp chestnut, 163, 167	Pokagon State Park, the eastern massasauga
swamp white, 167	(Sistrurus catenatus catenatus) in, 201
Oaks misidentified in the forest of Happy Valley,	Polychlorinated biphenyls, disposal of, 43
Jefferson County, Indiana, 167	Poplar, tulip or yellow, 167
Odonata, 217	Population size (human) of Lake County and
Ohio buckeye, 162, 166	Indiana, 46
Onion, 169	Populus deltoides, 89
Ophiostoma, 226	home of a bat colony, 87
Opponent characteristics in agonistic encounters in Japanese macaques, 272	Post-Conflict Behavior in Japanese Macaques at the Indianapolis Zoo: Age of Opponents
Opponents in selective post-conflict attraction in	Influences Reconciliation, 269
Japanese macaques, role of, 272	Potential wells, localized, 242
Osprey, 71, 72	Prairie Creek, Vigo County, Indiana, 87
Ossom, E.M., 169	Prairie vole, 24
Otus asio, 23	President William Clinton on environmental
Owl	racism, 44
barn, 21	Procyon lotor, 26
barred, 23	Pumpkin, fluted, 169
great horned, 23	effect of fertilizer on the fresh weight yields of,
screech, 23	172
short-eared, 23	effect of harvest interval on the total yield of, 172
Packerton Moraine in Wabash County, Indiana, 13	ideal harvest interval in, 174
Parke County, bats in, 279	mineral concentration in the leaves of, 174
Parker, Allen R., 21	Pygmy rattlesnake, 195
Passer domesticus, 197	Tyginy runnomune, 190
Patas monkeys, behavior of, 269	Quantum potentials, localized, 241
Paulownia, royal, 21	Quercus
Paulownia tomentosa, nesting site for the barn owl,	bicolor, 167
21	borealis, 167
Penicillium in indoor school air, 64, 66	michauxii, 163, 167
Pennsylvania, European spruce bark beetle in,	muehlenbergii, 162
225, 231	rubra, 162, 167
Peregrine falcon, 26	Quercus-Carya forest in Wabash County, Indiana,
Peritoneal	13, 14
exudate cells, 179	
macrophages, 177	Raccoon, 26
Peromyscus, 197	Racial composition of Lake County and Indiana, 4
Perth Limestone, 234	Racism
Phagocytosis of Leishmania major and Candida	disproved at Munster landfill, 51
albicans, 184, 190	environmental, 43
Phase diagrams confuse undergraduate earth	Rail, Virginia, 71, 72, 73, 74
science students, 265	Rasch model, 253
Picea abies, 227	Rat liver transformed (RLT-28) cell line, 2
Pickett, Thomas J., 241	Rattlesnake, pygmy, 195
Pigeon River State Fish and Wildlife Area, the	Reconciliation
eastern massasauga (Sistrurus catenatus	in Japanese macaques, 269
catenatus) in, 201	meaning in the study of Japanese macaque
Pigeon River State Forest, Michigan, 208	behavior, 271
Pigtail macaque, 269, 275	Reconciliatory behavior, occurrence in Japanese
Pike County, bats in, 279, 280	macaques, 271
Pileated woodpecker, 87	Red bat, 87, 93
Pipistrelle, eastern, 87, 93, 277, 278	Redbud, 162, 166
Pipistrellus subflavus, 87, 93, 277, 278	Redfronted lemurs, behavior of, 269
Platanus occidentalis, 89, 162	Red oak, 162, 163, 167
Plecotus rafinesquii, 278	Retinoic acid, 1
Pneumonitis, hypersensitivity, 61	cis (c-RA), 5
Poison ivy 80	trans (t DA) 1

Retinoic acid binding site, structural specificity at, 5	possible disjunct populations in Jackson and Sullivan Counties, Indiana, 198
Rhesus macaque, behavior of the, 269	preferred habitats of, 196
Rhinitis, chronic allergic, 61	robust populations in, 201
Rhus toxicodendron, 89	Sistrurus miliarius, 195
Rhykerd, C.L., 169	Slides (2 x 2), their use in increasing undergraduate
RLT-28 (rat liver transformed) cell line, 2	student interest in earth science, 265
Rock	Slippery elm, 162, 163, 164
undergraduate student interest in the formation of, 259	Social behavior in Japanese macaques, 269 Soils
undergraduate student interest in the study of	Avonburg silt loam, 160
the relative ages of, 257, 259, 260	Dearborn channery silt loam, 160
Rock cycle, undergraduate student interest in the study of, 257	drainage classes in Wabash County, Indiana, 17 drainage conditions in Wabash County, Indiana,
Rock dove, 23	16
Rocks and minerals, undergraduate student interest	Eden-Caneyville complex, 160
in the study of the difference between, 259,	Rossmoyne silt loam, 160
264	Ryker silt loam, 160
Rossmoyne silt loam soil, 160	Somatachlora hineana, 221
Royal paulownia, a nesting site for the barn owl, 21	Sora, 73, 74
Rye, 169	Sorenson's quotient of similarity, 161, 164, 168
Ryker silt loam soils, 160	Southern myotis, 278
	Sparrow
Sandhill crane, 71, 72	grasshopper, 73, 74
Sandimmune®, 179	Henslow's, 74
Sandpiper, upland, 71, 72, 74	house, 197
Saurus cernuus, 89	savannah, 73, 74
Savannah sparrow, 73, 74	vesper, 73, 74
Schools, indoor air quality problems, 62	Spatial visualization and its effect on an
Schrödinger Equation, 241	undergraduate student's ability to master earth
Scolytidae, 225	science, 259, 264
Screech owl, 23	Sphagnum-bog lakes, 208
Secale cereale, 169	Spinach, Indian, 172
Secondary succession in Happy Valley, Jefferson	Splenomegaly, caused by Leishmania major
County, Indiana, 159	infections in humans and mice, 178
Sedge wren, 71, 72, 73, 74	Spruce
Sedimentary rock formation, undergraduate student	Norway, 227
interest in the study of, 257	pests of, 225
Selective attraction between Japanese macaques,	Stacy, Mark, 277
269, 274	State-listed birds at the Newport Army Ammunition
Sex and reconciliation in Japanese macaques, 272 Sharp-shinned hawk, 71, 72	Plant, 71, 72
Shorelines, undergraduate student interest in the	Status of the Eastern Massasauga, Sistrurus c. catenatus, in Indiana with Management
study of the creation of, 257	
Short-eared owl, 23	Recommendations for Recovery, 195 Staunton Formation, 233
Silver-haired bat, 87, 93, 278	Stein, D., 177
Silver maple, 89	Stenacidia violacea, disjunct collembolan in
home of a bat maternity colony, 87	Indiana, 30
Sinella cavernarum, first collembolan described	Stinging nettle, 89
from Indiana, 29	Strix varia, 23
Sistrurus catenatus catenatus, 195	Student Evaluation of an Undergraduate Earth
bite of, 202	Science Class as a Function of Topic
current distribution in Indiana, 198	Difficulty and Topic Interest, 251
factors causing population decline in, 201	Study of Airborne Culturable Mold in Seventeen
hibernation in crayfish burrows, 197	East-Central Indiana School Buildings, 61
historical range in Indiana, 195, 198	Stylurus scudderi, a new species of clubtail in
management recommendations for, 204	Indiana, 219, 222

Succession in Happy Valley, Jefferson County, predators of, 26 Indiana, 159 prey of, 21 Sugar maple, 162, 163, 164 suggestions for protecting, 27 Sugar maple-elm-Ohio buckeye-redbud young per nest, 25 community, 160 Sugar maple-Ohio buckeye community, 159 United Church of Christ's Commission on Racial Sugar maple-white ash-white oak spp. Justice, 45 University of Science and Technology, Port community, 159 Sullivan County, possible disjunct population of Harcourt, Nigeria, 170 the eastern massasauga (Sistrurus catenatus Unusual Carbonate Buildups in the Upper catenatus) in, 198 Mansfield and Brazil Formations, Sun, Iris L., 1 Vanderburgh County, Indiana, 233 Sun, Leslie E., 1 Updated Checklist of Indiana Dragonflies Swamp cabbage, 170 (Odonata: Anisoptera), An, 217 Swamp chestnut oak, 163, 167 Upland sandpiper, 71, 72, 74 Upper Block Coal, 234 Swamp white oak, 167 Swinehart, Anthony L., 207 Urtica dioica, 89 Sycamore, 89, 162, 163, 166 Vanderburgh County, subsurface carbonates in, 233 Teaching and Research Farm of the University of Variational Method for solving the Schrödinger Science and Technology, Port Harcourt, Equation, 241 Nigeria, 170 Vaughn Consolidated Field, 233 T cells, 189 Vegetation of Wabash County, Indiana, 12 Telfairia occidentalis, 169 Ventilation systems, effect on culturable mold effect of fertilizer on the fresh weight yields of, levels, 65 Vermillion County, Indiana birds of the Newport Army Ammunition Plant effect of harvest interval on the total yield of, 172 ideal harvest interval in, 174 checklist of the birds of the Newport Army mineral concentration in the leaves of, 174 Ammunition Plant, 75 Vesper sparrow, 73, 74 helper subset of L3T4+ cells, 189 Vigna unguiculata, 169 secretion of IL-2 and γ-IFN by, 189 Vigo County, Indiana, bats of, 87 Th2 Vireo, Bell's, 73 secretion of IL-4 and IL-5 by, 189 Virginia rail, 71, 72, 73, 74 subset of L3T4+ cells, 189 Vole suppression of, 190 meadow, 24 Tilia americana, 162 prairie, 24 TNF- α (tumor necrosis factor- α), 1 prey of the eastern massasauga, 197 Tomicus piniperda, 225, 227 primary prey of the barn owl, 21 Topographic maps, undergraduate student interest in the study of, 257, 259, 260 Wabash County, Indiana Tornado damage, Jefferson County, 159 Acer-Fagus forest in, 13 Transformed cells, the effect of cytokines and Bluffton Till Plain Section in, 13 retinoic acid on, 1 Central Till Plain Natural Region in, 13 Transformed human cervical (HeLa) cell line, 2 Eel River valley in, 13 Transmembrane oxidoreductase activities, 2 elevation in, 16 Transplasma membrane diferric transferrin forest fragment characteristics of, 18 reductase, 1 Mississinewa Moraine in, 13 Tulip poplar, 167 Northern Lakes Natural Region in, 13 Tullbergia harti, comb. nov., 30 Packerton Moraine in, 13 Quercus-Carya forest in, 13, 14 Tumor-bearing animals, increased Ia expression in, soil drainage classes in, 17 Tumor necrosis factor- α (TNF- α), 1 soil drainage conditions in, 16 Tyto alba vegetation of, 12 at the Newport Army Ammunition Plant, 74 Wabash Lowlands Physiographic Region, 87 nesting in Indiana, 21 Waltz, Robert D., 29, 225

Warbler

black-and-white, 71, 72

Canada, 71, 72

Waste management facility siting in, 43

Detroit, Michigan, 45

Houston, Texas, 45

Lake County, Indiana, 44, 46, 48

Weiss, Ronald A., 69

Wetland habitats at the Newport Army Ammunition

Plant, 74

Whitaker, John O., Jr., 87, 277

White ash, 162, 165

Williamson, E.B., 217

Wind erosion, undergraduate student interest in

the study of, 259

Woodpecker, pileated, 87

Wren

marsh, 74

sedge, 71, 72, 73, 74

Xyleborus atratus, 227

Xylosandrus crassiusculus, 227

Yeast spores in indoor school air, 64, 66 Yellow poplar, 167

Zapus hudsonius, 197

Zygoptera, 217







PHYSICS AND ASTRONOMY	
T.J. Pickett and C. Hartmann. BASIS FUNCTIONS FOR	
LOCALIZED QUANTUM POTENTIALS	241
	10 30
SCIENCE EDUCATION	
W.J. Boone. STUDENT EVALUATION OF AN	2,473
UNDERGRADUATE EARTH SCIENCE CLASS	
AS A FUNCTION OF TOPIC DIFFICULTY AND	T TO
TOPIC INTEREST	251
ZOOLOGY	Ý.
S.L. Kight. POST-CONFLICT BEHAVIOR IN JAPANESE	
MACAQUES AT THE INDIANAPOLIS ZOO: AGE	
OF OPPONENTS INFLUENCES RECONCILIATION	269
J.O. Whitaker, Jr., and M. Stacy. BATS OF ABANDONED	V 100
COAL MINES IN SOUTHWESTERN INDIANA	277
MANUSCRIPT REVIEWERS	281
	2-3
INDEX	283

PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE

Volume 105, No. 3-4 (1996)

CONTENTS

BOTANY	
P.C. MacMillan. FIFTEEN YEARS OF FOREST SUCCESSION	
IN HAPPY VALLEY, JEFFERSON COUNTY, INDIANA	159
E.M. Ossom, J.R. Igbokwe, and C.L. Rhykerd. EFFECTS OF	
MIXED FERTILIZER LEVELS AND HARVEST	
INTERVALS ON THE YIELD AND MINERAL	1975
CONCENTRATION OF THE FLUTED PUMPKIN,	
TELFAIRIA OCCIDENTALIS HOOK.	169
CELL BIOLOGY	
N.C. Behforouz, D. Stein, L. Brown, R. Behnen, and P. Marshall.	
HYPER-Ia ANTIGEN EXPRESSION ON PERITONEAL	-1,%
MACROPHAGES CORRELATES WITH SEVERE	
LEISHMANIA MAJOR INFECTIONS IN MICE	177
ECOLOGY	
B.A. Kingsbury. STATUS OF THE EASTERN MASSASAUGA,	-1
SISTRURUS C. CATENATUS, IN INDIANA WITH	
MANAGEMENT RECOMMENDATIONS FOR	
RECOVERY	195
	175
A.L. Swinehart. FISHES OF THE INLAND WATERS OF	
BEAVER ISLAND, CHARLEVOIX COUNTY,	
MICHIGAN	207
	207
ENTOMOLOGY	198
J.R. Curry. AN UPDATED CHECKLIST OF INDIANA	
DRAGONFLIES (ODONATA: ANISOPTERA)	217
R.D. Waltz. EUROPEAN SPRUCE BARK BEETLE	
(IPS TYPOGRAPHUS (L.)) INTERCEPTIONS IN	
INDIANA 1995	225
GEOLOGY AND GEOGRAPHY	
J.B. Droste and A.S. Horowitz. UNUSUAL CARBONATE	
BUILDUPS IN THE UPPER MANSFIELD AND	
BRAZIL FORMATIONS, VANDERBURGH COUNTY,	
INDIANAINDIANA	233
TIVE TO THE TOTAL CONTROL OF THE TOTAL CONTROL OT THE TOTAL CONTROL OF T	233