

## The Eighty Most Cited Articles in *Physiological Zoology/Physiological and Biochemical Zoology*, 1927 to 2006

In honor of the eightieth year of *Physiological and Biochemical Zoology*, the University of Chicago Press is making available electronically the 80 most cited articles that have appeared in the journal (as *Physiological Zoology* and as *Physiological and Biochemical Zoology*). The 80 articles are listed below by year, along with the total number of citations to date.

Year and Author(s)	Title	Volume, Issue, and Page Numbers	Total Number of Citations
1929:			
Hisaw F.L.	The Corpus Luteum Hormone. I. Experimental Relaxation of the Pelvic Ligaments of the Guinea Pig	2(1):59–79	89
1934:			
Welty J.C.	Experiments in Group Behavior of Fishes	7(1):85–128	116
1937:			
Krehbiel R.H.	Cytological Studies of the Decidual Reaction in the Rat during Early Pregnancy and in the Production of Deciduomata	10(2):212–234	261
1939:			
Hamburger V.	Motor and Sensory Hyperplasia following Limb-Bud Transplantations in Chick Embryos	12(3):268–284	104
Allee W.C., N.E. Collias, and C.Z. Lutherman	Modification of the Social Order in Flocks of Hens by the Injection of Testosterone Propionate	12(4):412–440	90
1942:			
Ginsburg B. and W.C. Allee	Some Effects of Conditioning on Social Dominance and Subordination in Inbred Strains of Mice	15(4):485–506	222
1943:			
Rawles M.E.	The Heart-Forming Areas of the Early Chick Blastoderm	16(1):22–43	142
1944:			
Weymouth F.W., J.M. Crismon, V.E. Hall, H.S. Belding, and J. Field II	Total and Tissue Respiration in Relation to Body Weight: A Comparison of the Kelp Crab with Other Crustaceans and with Mammals	17(1):50–71	96
Collias N.E.	Aggressive Behavior among Vertebrate Animals	17(1):83–123	151
Greenberg B. and G.K. Noble	Social Behavior of the American Chameleon ( <i>Anolis carolinensis</i> Voigt)	17(4):392–439	131
1947:			
Scudamore H.H.	The Influence of the Sinus Glands upon Molting and Associated Changes in the Crayfish	20(2):187–208	112
Rawles M.E.	Origin of Pigment Cells from the Neural Crest in the Mouse Embryo	20(3):248–265	303
Beeman E.A.	The Effect of Male Hormone on Aggressive Behavior in Mice	20(4):373–405	228

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1948: Pardi L.	Dominance Order in <i>Polistes</i> Wasps	21(1):1–13	183
1949: Braddock J.C.	The Effect of Prior Residence upon Dominance in the Fish <i>Platyplecillus maculatus</i>	22(2):161–169	90
1950: Swift H.H.	The Desoxyribose Nucleic Acid Content of Animal Nuclei	23(3):169–198	524
1951: Chase H.B., H. Rauch, and V.W. Smith	Critical Stages of Hair Development and Pigmentation in the Mouse	24(1):1–7	201
Scott J.P. and E. Fredericson	The Causes of Fighting in Mice and Rats	24(4):273–309	298
1952: Flax M.H. and M.H. Himes	Microspectrophotometric Analysis of Metachromatic Staining of Nucleic Acids	25(4):297–311	426
1953: Scholander P.F., W. Flagg, V. Walters, and L. Irving	Climatic Adaptation in Arctic and Tropical Poikilotherms	26(1):67–92	330
Bovbjerg R.V.	Dominance Order in the Crayfish <i>Orconectes virilis</i> (Hagen)	26(2):173–178	111
1954: Park T.	Experimental Studies of Interspecies Competition. II. Temperature, Humidity, and Competition in Two Species of <i>Tribolium</i>	27(3):177–238	231
1955: Irving L., H. Krog, and M. Monson	The Metabolism of Some Alaskan Animals in Winter and Summer	28(3):173–185	144
Gerking S.D.	Influence of Rate of Feeding on Body Composition and Protein Metabolism of Bluegill Sunfish	28(4):267–282	95
1956: Dawson W.R. and G.A. Bartholomew	Relation of Oxygen Consumption to Body Weight, Temperature, and Temperature Acclimation in Lizards <i>Uta stansburiana</i> and <i>Sceloporus occidentalis</i>	29(1):40–51	96
Newman M.A.	Social Behavior and Interspecific Competition in Two Trout Species	29(1):64–81	138
Bovbjerg R.V.	Some Factors Affecting Aggressive Behavior in Crayfish	29(2):127–136	137
1957: Frank P.W., C.D. Boll, and R.W. Kelly	Vital Statistics of Laboratory Cultures of <i>Daphnia pulex</i> DeGeer as Related to Density	30(4):287–305	91
1958: Blažka P.	The Anaerobic Metabolism of Fish	31(2):117–128	195
1959: Morrison P., F.A. Ryser, and A.R. Dawe	Studies on the Physiology of the Masked Shrew <i>Sorex cinereus</i>	32(4):256–271	154

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1960:			
Aiello E.L.	Factors Affecting Ciliary Activity on the Gill of the Mussel <i>Mytilus edulis</i>	33(2):120–135	109
Pearson O.P.	The Oxygen Consumption and Bioenergetics of Harvest Mice	33(2):152–160	90
Kinne O.	Growth, Food Intake, and Food Conversion in a Euryplastic Fish Exposed to Different Temperatures and Salinities	33(4):288–317	164
1961:			
Doyle W.L. and D. Gorecki	The So-Called Chloride Cell of the Fish Gill	34(2):81–85	100
Hutchison V.H.	Critical Thermal Maxima in Salamanders	34(2):92–125	193
1962:			
Ruibal R.	The Adaptive Value of Bladder Water in the Toad, <i>Bufo cognatus</i>	35(3):218–223	111
Hart J.S.	Seasonal Acclimatization in Four Species of Small Wild Birds	35(3):224–236	132
1963:			
Karakashian S.J.	Growth of <i>Paramecium bursaria</i> as Influenced by the Presence of Algal Symbionts	36(1):52–68	92
Lasiewski R.C.	Oxygen Consumption of Torpid, Resting, Active, and Flying Hummingbirds	36(2):122–140	223
Bartholomew G.A. and V.A. Tucker	Control of Changes in Body Temperature, Metabolism, and Circulation by the Agamid Lizard, <i>Amphibolurus barbatus</i>	36(3):199–218	232
1964:			
Park T., P.H. Leslie, and D.B. Mertz	Genetic Strains and Competition in Populations of <i>Tribolium</i>	37(2):97–162	110
Bartholomew G.A. and V.A. Tucker	Size, Body Temperature, Thermal Conductance, Oxygen Consumption, and Heart Rate in Australian Varanid Lizards	37(4):341–354	233
1965:			
West G.C.	Shivering and Heat Production in Wild Birds	38(2):111–120	96
Whitford W.G. and V.H. Hutchison	Gas Exchange in Salamanders	38(3):228–242	89
Park T., D.B. Mertz, W. Grodzinski, and T. Prus	Cannibalistic Predation in Populations of Flour Beetles	38(3):289–321	111
1966:			
Costlow J.D., Jr., C.G. Bookhout, and R.J. Monroe	Studies on the Larval Development of the Crab, <i>Rhithropanopeus harrisi</i> (Gould). I. The Effect of Salinity and Temperature on Larval Development	39(2):81–100	120
1967:			
Dewitt C.B.	Precision of Thermoregulation and Its Relation to Environmental Factors in the Desert Iguana, <i>Dipsosaurus dorsalis</i>	40(1):49–66	151

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1968:			
Hutchison V.H., W.G. Whitford, and M. Kohl	Relation of Body Size and Surface Area to Gas Exchange in Anurans	41(1):65–85	159
1974:			
Holeton G.F.	Metabolic Cold Adaptation of Polar Fish: Fact or Artefact?	47(3):137–152	130
1976:			
Rahn H., C.V. Paganelli, I.C.T. Nisbet, and G.C. Whittow	Regulation of Incubation Water Loss in Eggs of Seven Species of Terns	49(2):245–259	96
1978:			
Ortiz C.L., D. Costa, and B.J. Le Boeuf	Water and Energy Flux in Elephant Seal Pups Fasting under Natural Conditions	51(2):166–178	140
Wingfield J.C. and D.S. Farner	The Endocrinology of a Natural Breeding Population of the White-Crowned Sparrow ( <i>Zonotrichia leucophrys pugetensis</i> )	51(2):188–205	200
1979:			
Vleck D.	The Energy Cost of Burrowing by the Pocket Gopher <i>Thomomys bottae</i>	52(2):122–136	174
Vleck C.M., D.F. Hoyt, and D. Vleck	Metabolism of Avian Embryos: Patterns in Altricial and Precocial Birds	52(3):363–377	113
1980:			
Sidell B.D.	Responses of Goldfish ( <i>Carassius auratus</i> , L.) Muscle to Acclimation Temperature: Alterations in Biochemistry and Proportions of Different Fiber Types	53(1):98–107	100
McNab B.K.	On Estimating Thermal Conductance in Endotherms	53(2):145–156	207
Somero G.N. and J.J. Childress	A Violation of the Metabolism-Size Scaling Paradigm: Activities of Glycolytic Enzymes in Muscle Increase in Larger-Size Fish	53(3):322–337	177
1982:			
Bucher T.L., M.J. Ryan, and G.A. Bartholomew	Oxygen Consumption during Resting, Calling, and Nest Building in the Frog <i>Physalaemus pustulosus</i>	55(1):10–22	102
1985:			
Stevenson R.D., C.R. Peterson, and J.S. Tsuji	The Thermal Dependence of Locomotion, Tongue Flicking, Digestion, and Oxygen Consumption in the Wandering Garter Snake	58(1):46–57	131
Andrews R.M. and F.H. Pough	Metabolism of Squamate Reptiles: Allometric and Ecological Relationships	58(2):214–231	127

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Service P.M., E.W. Hutchinson, M.D. Mackinley, and M.R. Rose	Resistance to Environmental Stress in <i>Drosophila melanogaster</i> Selected for Postponed Senescence	58(4):380–389	172
Herbert C.V. and D.C. Jackson	Temperature Effects on the Responses to Prolonged Submergence in the Turtle <i>Chrysemys picta bellii</i> . II. Metabolic Rate, Blood Acid-Base and Ionic Changes, and Cardiovascular Function in Aerated and Anoxic Water	58(6):670–681	119
1987:			
Ball G.F. and J.C. Wingfield	Changes in Plasma Levels of Luteinizing Hormone and Sex Steroid Hormones in Relation to Multiple-Broodedness and Nest-Site Density in Male Starlings	60(2):191–199	132
Service P.M.	Physiological Mechanisms of Increased Stress Resistance in <i>Drosophila melanogaster</i> Selected for Postponed Senescence	60(3):321–326	127
1988:			
Packard G.C. and T.J. Boardman	The Misuse of Ratios, Indices, and Percentages in Ecophysiological Research	61(1):1–9	232
Walsberg G.E.	Evaluation of a Nondestructive Method for Determining Fat Stores in Small Birds and Mammals	61(2):153–159	122
Gessaman J.A. and K.A. Nagy	Energy Metabolism: Errors in Gas-Exchange Conversion Factors	61(6):507–513	111
1989:			
Dunham A.E., B.W. Grant, and K.L. Overall	Interfaces between Biophysical and Physiological Ecology and the Population Ecology of Terrestrial Vertebrate Ectotherms	62(2):335–355	127
Congdon J.D.	Proximate and Evolutionary Constraints on Energy Relations of Reptiles	62(2):356–373	97
Kurta A., G.P. Bell, K.A. Nagy, and T.H. Kunz	Energetics of Pregnancy and Lactation in Free-Ranging Little Brown Bats ( <i>Myotis lucifugus</i> )	62(3):804–818	92
Nickerson D.M., D.E. Facey, and G.D. Grossman	Estimating Physiological Thresholds with Continuous Two-Phase Regression	62(4):866–887	97
Yeager D.P. and G.R. Ultsch	Physiological Regulation and Conformation: A BASIC Program for the Determination of Critical Points	62(4):888–907	114
1991:			
Farrell A.P.	From Hagfish to Tuna: A Perspective on Cardiac Function in Fish	64(5):1137–1164	106
1992:			
Graves J.L., E.C. Toolson, C. Jeong, L.N. Vu, and M.R. Rose	Desiccation, Flight, Glycogen, and Postponed Senescence in <i>Drosophila melanogaster</i>	65(2):268–286	97

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Hammond K.A. and J. Diamond	An Experimental Test for a Ceiling on Sustained Metabolic Rate in Lactating Mice	65(5):952–977	124
1993:			
Iverson S.J., W.D. Bowen, D.J. Boness, and O.T. Oftedal	The Effect of Maternal Size and Milk Energy Output on Pup Growth in Grey Seals ( <i>Halichoerus grypus</i> )	66(1):61–88	90
Lindström Å., G.H. Visser, and S. Daan	The Energetic Cost of Feather Synthesis Is Proportional to Basal Metabolic Rate	66(4):490–510	88
1994:			
Garland T., Jr., and S.C. Adolph	Why Not to Do Two-Species Comparative Studies: Limitations on Inferring Adaptation	67(4):797–828	215
Hammond K.A., M. Konarzewski, R.M. Torres, and J. Diamond	Metabolic Ceilings under a Combination of Peak Energy Demands	67(6):1479–1506	89
1995:			
Geiser F. and T. Ruf	Hibernation versus Daily Torpor in Mammals and Birds: Physiological Variables and Classification of Torpor Patterns	68(6):935–966	128