

## **.CURRICULUM VITAE**

Bernd Heinrich

2021

bheinrich153@gmail.com

### **EDUCATION**

B.A. (Zoology) 1964 University of Maine, Orono

M.S. (Zoology) 1966 University of Maine, Orono. Thesis: The Physiology of *Euglena gracilis* during substrate induction and repression of the Glyoxylate by-pass (awarded "with distinction").

Ph.D. (Zoology) 1970 University of California, Los Angeles. Thesis: Flight Energetics and Temperature regulation by blood circulation in the sphinx moth, *Manduca sexta*. (awarded "with distinction").

Postdoctoral Fellow 1970 University of California, Los Angeles

### **HONORS**

Guggenheim Fellow, 1976-77

Harvard Fellow, 1976-77

University of Vermont Scholar in the Biological Sciences, 1985

Alexander von Humboldt Senior Scientist Fellowship Award, 1988-89 (Federal Republic of Germany)

Lady Davis Fellowship (Jerusalem, Israel) 1992

L.L. Winship Book Award (For In a Patch of Fireweed), 1984.

Burroughs Writing Award (For An Owl in the House), ~ 1991.

Rutstrom Authorship Award for Conservation and Environmental Writing (For A Year in the Maine Woods), 1996.

Sigma Xi Lecturer, 1995-1997

Outstanding Science Trade Book for Children (By Children's Books Council)

Member Vermont Academy of Science and Engineering-1997.

Member Vermont Academy of Arts and Sciences- 1998.

Franklin Fairbanks Award for Contributions of Vermont Culture- 1997.

New England Bookseller's Award for Nonfiction for 1998.

John Burroughs Medal for Nature Writing, for Mind of the Raven- 2000

Honorary Doctorate, University of Maine, Farmington – 1999

Honorary Master of Philosophy & Human Biology – College of the Atlantic, 2006

Honorary Doctorate, Unity College, Maine 1986 and-2000!

Honorary Doctorate of Humane Letters, St. Michaels College, 2008

American Academy of Arts and Sciences. 2004.

Maine Running Hall of Fame, 1996.

Maine Sportsmen's Hall of Fame, 2000.

American Ultra-running Hall of Fame, 2008.

Sterling College Presidential Stewardship Award, 2014.

University of Maine Achievement Award, 2014

Pen New England Book Award for non-fiction, for Life Everlasting- 2013.

John Burroughs Nature Essay Award, for Chickadees in Winter- 2016

Art Exhibit: "The Naturalist as Artist: Artist as Naturalist". Fleming Museum, Burlington, VT. 2004.

Art Exhibit, "Artist as Naturalist". L C Bates Museum, Good Will- Hinckley, Maine. 2005.

Fellow, American Entomological Society, 2017

Henry David Thoreau Prize for Literary Excellence in Nature Writing, 2018

National Outdoor Book Award winner, for A Naturalist at Large 2018

New England Book Award winner, for A Naturalist at Large 2018

### **TEACHING EXPERIENCE**

Assistant Professor, University of California, Berkeley, 1971-75

Associate Prof. UC Berkeley, 1975-1977

Professor of Entomology, University of California, Berkeley, 1978-1981  
Professor of Biology, University of Vermont, 1981-2003  
Professor Emeritus, University of Vermont 2004-  
2020, still teaching Winter Ecology for University of Vermont  
Research Associate, Bowdoin College, 2017-

### RESEARCH PUBLICATIONS

- Heinrich B. 1961. Weasels in Farmington. *Maine Field Naturalist* 17:24-25.
- Cook, J.R. and B. Heinrich. 1965. Glucose vs. acetate metabolism in Euglena. *J. Protozoology* 12:581-584.
- Heinrich, B. and J. R. Cook. 1967. Studies on the respiratory physiology of Euglena gracilis cultured on acetate or glucose. *J. Protozoology*. 14:548-553
- Cook, J. R. and B. Heinrich. 1968. Unbalanced respiratory growth of Euglena. *J. Gen.Microbiol.* 53:237-251.
- Heinrich, B. 1970. Thoracic temperature stabilization in a free-flying moth. *Science* 168: 580-582.
- Heinrich, B. 1970. Nervous control of the heart during thoracic temperature regulation in a sphinx moth. *Science* 169:606-607.
- Heinrich, B. 1971. The effect of leaf geometry on the feeding behavior of the caterpillar of Manduca sexta (Sphingidae). *Anim. Behaviour* 19:119-124.
- Heinrich, B. 1971. Temperature regulation of the sphinx moth, Manduca sexta. I. Flight energetics and body temperature during free and tethered flight. *J. Exp. Biol.* 54: 141-152.
- Heinrich, R. 1971. Temperature regulation of the sphinx moth, Manduca sexta. II. Regulation of heat loss by control of blood circulation. *J. Exp. Biol.* 54:153-166.
- Heinrich, B. and G. A. Bartholomew. 1971. An analysis of preflight warm-up in the sphinx moth, Manduca sexta. *J. Exp. Biol.* 55:223-239.
- Heinrich, B. 1972. Temperature regulation in bumblebees, Bombus vagans: a field study. *Science* 175:185-187.
- Heinrich, B. 1972. Energetics of temperature regulation and foraging in a bumblebee, Bombus terricola Kirby. *J. Comp. Physiol.* 77:49-64.
- Heinrich, B. 1972. Patterns of endothermy in bumblebee queens, drones and workers. *J. Comp. Physiol.* 77:65-79.
- Heinrich, B. and P. H. Raven. 1972. Energetics and pollination ecology. *Science* 176:597-602.
- Kammer, A. E. and B. Heinrich. 1972. Neural control of bumblebee fibrillar muscles during shivering. *J. Comp. Physiol.* 78:337-345.
- Heinrich, B. 1972. Thoracic temperature of butterflies in the field near the equator. *Comp. Biochem. Physiol.* 43A:459-467.
- Heinrich, B. 1972. Physiology of brood incubation in the bumblebee queen, Bombus vosnesenskii. *Nature* 239:223-225.
- Heinrich, B. and T. M. Casey. 1973. Metabolic rate and endothermy in sphinx moths. *J. Comp. Physiol.* 82:195-206.
- Bartholomew, G. A. and B. Heinrich. 1973. A field study of flight temperature in moths in relation to body weight and wing loading. *J. Exp. Biol.* 58:123-135.
- Heinrich, B. and A. Kammer. 1973. Activation of the fibrillar muscles in the bumblebee during warm-up, stabilization of thoracic temperature and flight. *J. Exp. Biol.* 58:677-688.

- Heinrich, B. 1974. Thermoregulation in bumblebees. I. Brood incubation by Bombus vosnesenskii queens. *J. Comp. Physiol.* 88:129-140.
- Heinrich, B. 1974. Pheromone induced brooding behavior in Bombus vosnesenskii and B. edwardsii (Hymenoptera: Bombidae). *J. Kansas Ent. Soc.* 47:396-404.
- Heinrich, B. 1974. Thermoregulation in endothermic insects. *Science* 185:747-756.
- Kammer, A. E. and B. Heinrich. 1974. Metabolic rates related to muscle activity in bumblebees. *J. Exp. Biol.* 61:219-227.
- Heinrich, B. 1975. Thermoregulation in bumblebees. II. Energetics of warm-up and free flight. *J. Comp. Physiol.* 96:155-166.
- Heinrich, B. and C. Pantle. 1975. Thermoregulation in small flies (Syrphus sp.): Basking and shivering. *J. Exp. Biol.* 62:599-610.
- Heinrich, B. 1975. Bee flowers: A hypothesis on flower variety and blooming times. *Evolution* 29:325-334.
- Heinrich, B. 1975. Energetics of pollination. *Ann. Rev. Ecol. & Syst.* 6:139-170.
- Heinrich, B. 1976. Foraging specializations of individual bumblebees. *Ecol. Mon.* 46:105-128.
- Oster, G. and B. Heinrich. 1976. Why do bumblebees "major"? A mathematical model. *Ecol. Mon.* 46:128-133.
- Heinrich, B. 1976. Heat exchange in relation to blood flow between thorax and abdomen in bumblebees. *J. Exp. Biol.* 64:561-585.
- Heinrich, B. 1976. Resource partitioning among some eusocial insects: Bumblebees. *Ecol.* 57: 874-889.
- Heinrich, B. 1976. Flowering phenologies: bog, woodland, and disturbed habitats. *Ecol.* 57: 890-899.
- Heinrich, B. 1977. Why have some animals evolved to regulate a high body temperature? *Am. Naturalist.* 111:623-640.
- Heinrich, B., P. Mudge, and P. Deringis. 1977. A laboratory analysis of flower constancy in foraging bumblebees: Bombus ternarius and B. terricola. *Behav. Ecol. and Sociobiol.* 2:247-266.
- Bartholomew, G.. and B. Heinrich. 1978. Endothermy in African dung beetles during flight, ball making, and ball rolling. *J. Exp. Biol.* 73:65-83.
- Heinrich, B. and T. M. Casey. 1978. Heat transfer in dragonflies: 'Fliers' and 'perchers'. *J. Exp. Biol.* 74:17-36.
- Heinrich, B. and G. A. Bartholomew. 1978. Roles of endothermy and size in inter- and intraspecific competition for elephant dung in an African dung beetle, Scarabaeus laevistriatus. *Physiol. Zool.* 52:484-494.
- Allen, T. S., S. Cameron, R. McGinley, and B. Heinrich. 1978. The role of workers and new queens in the ergonomics of a bumblebee colony: (Hymenoptera: Apoidea). *J. Kansas Entomological Soc.* 51(3):329-342.
- Heinrich, B. 1979. Resource heterogeneity and patterns of foraging in bumblebees. *Oecologia* 140:235-245.
- Heinrich, B. 1979. "Majoring" and "minoring" by foraging bumblebees, Bombus vagans: An experimental analysis. *Ecology* 60:245-255.
- Waddington, K. D. and B. Heinrich. 1979. The foraging movements of bumblebees on vertical "inflorescences": An experimental analysis. *J. Comp. Physiol.* 134:113-117.
- Heinrich, B. 1979. Thermoregulation of African and European honeybees during foraging, attack, and hive exits and returns. *J. Exp. Biol.* 80:217-229.
- Heinrich, B. 1979. Keeping a cool head: Thermoregulation in honeybees. *Science* 205:

- 269-271.
- Heinrich, B. 1979. Foraging strategies of caterpillars: Leaf damage and possible predator avoidance strategies. *Oecologia* 40:325-337.
- Heinrich, B. 1980. Mechanisms of body temperature regulation in honeybees, *Apis mellifera*. I. Regulation of head temperature. *J. Exp. Biol.* 85:61-67.
- Heinrich, B. 1980. Mechanisms of body temperature regulation in honeybees, *Apis mellifera*. II. Regulation of thoracic temperature at high air temperatures. *J. Exp. Biol.* 85:73-87.
- Heinrich, B. and D. Vogt. 1980. Aggregation and foraging behavior of whirligig beetles (Coleoptera: Gyrinidae). *Behav. Ecol. & Sociobiol.* 7:179-186.
- Heinrich, B. 1981. The mechanisms and energetics of honeybee swarm temperature regulation. *J. Exp. Biol.* 91:25-55.
- Heinrich, B. 1981. Energetics of honeybee swarm thermoregulation. *Science* 212:565-566.
- Waddington, K. D., T. Allen, and B. Heinrich. 1981. Floral preferences of bumblebees (*Bombus edwardsii*) in relation to variable vs. constant rewards. *Animal Behaviour* 29:779-784.
- Heinrich, B. 1981. The energetics of pollination. *Ann. Miss. Bot. Garden* 68:370-378.
- Heinrich, B. and S. L. Collins. 1983. Caterpillar leaf damage and the game of hide-and-seek with birds. *Ecology* 64:592-602.
- Vogt, F. D. and B. Heinrich. 1983. Thoracic temperature variations in the onset of flight in dragonflies (Odonata: Anisoptera). *Physiol. Zool.* 56:236-241.
- Heinrich, B. 1983. Do bumblebees forage optimally, and does it matter? *Am. Zool.* 23: 273-281.
- Heinrich, B. and M. Heinrich. 1983. Size and caste in temperature regulation by bumblebees. *Physiol. Zool.* 56:552-562.
- Heinrich, B. and M. Heinrich. 1983. Torpor in foraging workers and drones of the bumblebee, *Bombus terricola*. *Physiol. Zool.* 56:563-567.
- Heinrich, B. 1984. Strategies of thermoregulation and foraging in two wasps, *Dolichovespula maculata* and *Vespula vulgaris*. *J. Comp. Physiol. B.* 154:175-180.
- Heinrich, B. and M. Heinrich. 1984. The pit-trapping foraging strategy of the ant lion, *Myrmeleon immaculatus* DeGeer (Neuroptera: Myrmeleontidae) *Behav. Ecol. & Sociobiol.* 14:151-160.
- Real, R. G., Ianazzi, R., Kamil, A. C. and B. Heinrich. 1984. Discrimination and generalization of leaf damage by blue jays (*Cyanocitta cristata*). *Animal Learning and Behavior* 12:202-208.
- Heinrich, B. and T. P. Mommsen. 1985. Flight of winter moths near 0°C. *Science* 228: 177-179.
- Heinrich, B. 1985. Men vs. Women, Marathoners vs. Ultramarathoners. *Ultrarunning* Jan. - Feb. 1985.
- Heinrich, B. and S. L. Buchmann. 1986. Thermoregulatory physiology of the carpenter bee, *Xylocopa varipunctata*. *J. Comp. Physiol. B* 156:557-562.
- Heinrich, B. 1986. Thermoregulation and flight activity of the satyr, *Coenonympha inornata* (Lepidoptera: Satyridae). *Ecology* 67:593-597.
- Heinrich, B. and E. McClain. 1986. "Laziness" and hypothermia as a foraging strategy in flower scarabs (Coleoptera: Scarabaeidae). *Physiol. Zool.* 59:273-282.
- Heinrich B. 1986. Comparative thermoregulation of four montane butterflies of different mass. *Physiol. Zool.* 59:616-626.

- Heinrich, B. 1987. Thermoregulation by winter-flying endothermic moths. *J. Exp. Biol.* 127: 313-332.
- Morgan, K. and B. Heinrich. 1987. Temperature regulation in bee- and wasp-mimicking syrphid flies. *J. Exp. Biol.* 133:59-71.
- Heinrich, B. 1988. Why do ravens fear their food? *Condor* 90:950-952.
- Kukal, O., B. Heinrich and J. Duman. 1988. Behavioral thermoregulation in the freeze-tolerant Arctic caterpillar, *Gynaephora groenlandica*. *J. Exp. Biol.* 138:181-193.
- Heinrich, B. 1988. Raven tool use? *Condor* 90:270-271.
- Heinrich, B. 1988. Winter foraging at carcasses by three sympatric corvids, with emphasis on recruitment by the raven, *Corvus corax*. *Behav. Ecol. & Sociobiol.* 23:141-156.
- Heinrich, B. 1989. Beating the heat in obligate insect endotherms: The non-organismal problem and the organismal solution. *Am. Zool.* 29:1157-1168.
- Heinrich, B. 1990. Is "Reflectance" basking real? *J. Exp. Biol.* 154:31-43.
- Heinrich, B. and J. Marzluff. 1991. Do common ravens yell because they want to attract others? *Behav. Ecol. & Sociobiol.* 28:13-21.
- Esch, H., F. Goller and B. Heinrich. 1991. How do bees shiver? *Naturwissenschaften* 78:325-328.
- Marzluff, J. and B. Heinrich. 1991. Foraging by common ravens in the presence and absence of territory holders: an experimental analysis of social foraging. *Anim. Behav.* 42:755-770.
- Heinrich, B. 1992. Maple sugaring by red squirrels. *J. Mammal.* 73:51-54.
- Heinrich, B. and J. M. Marzluff. 1992. Age and mouth color in Common Ravens, *Corvus corax*. *Condor* 94:549-550.
- Heinrich, B. and J. M. and C. S. Marzluff. 1993. Ravens are attracted to the appeasement calls of discoverers when they are attacked at defended food. *The Auk* 110:247-254.
- Heinrich, B. and D. F. Vogt. 1993. Abdominal temperature regulation by Arctic bumblebees. *Physiol. Zool.* 66:257-269.
- Cotterman, V. and B. Heinrich. 1993. A large temporary raven roost. *The Auk* 110:395.
- Heinrich, B., D. Kaye, T. Knight and K. Schaumburg. 1994. Dispersal and association among a "flock" of common ravens, *Corvus corax*. *The Condor* 96:545-551.
- Heinrich, B. 1994. Dominance and weight-changes in the common raven, *Corvus corax*. *Anim. Behav.* 48:1463-1465.
- Parker, P. G., F. A. Waite, B. Heinrich & J. M. Marzluff. 1994. Do common ravens share food bonanzas with kin? DNA fingerprinting evidence. *Anim. Behav.* 48:1085-1093.
- Heinrich, B. 1994. When is the common raven black? *Wilson Bull.* 106(3):571-572.
- Heinrich, B. 1994. Does the early bird get (and show) the meat? *The Auk* 111:764-769.
- Heinrich, B. 1995. Neophilia and exploration in juvenile common ravens, *Corvus corax*. *Anim. Behaviour* 50:695-704.
- Heinrich, B. and R. Bell. 1995. Winter food of a small insectivorous bird, the Golden-crowned Kinglet. *Wilson Bulletin* 107(3):558-561.
- Heinrich, B., J. Marzluff and W. Adams. 1996. Fear and food recognition in naive common ravens. *The Auk* 112 (2):499-503.
- Marzluff, J. M., B. Heinrich and C. S. Marzluff. 1996. Roosts are mobile information centers. *Anim. Behaviour* 51:89-103.
- Heinrich, B. 1995. An experimental investigation of insight in common ravens, *Corvus corax*. *The Auk* 112: 994-1003.

- Ybarrondo, B.A. and B. Heinrich. 1996. Thermoregulation and response to competition in the African Dung Ball-Rolling Beetle Kheper nigroaeneus (Coleoptera: Scarabaeidae). *Physiol. Zool* 69:35-48.
- Vogt, D. F., B. Heinrich, T. O. Dabolt and H. L. McBath. 1994. Ovary development and Colony founding in subarctic and temperate-zone bumblebee queens. *Can. J. Zoology* 72:1551-1556.
- Vogt, D. F., B. Heinrich, and R. C. Plowright. 1998. Ovarial development in bumblebee queens : The influence of abdominal temperature and food availability. *Can. J. Zool.* 76: 2026-2030.
- Heinrich, B., C.C. Joerg, S.S. Madden and E.W. Sanders Jr. 1997. Black-capped chickadees and Red-breasted nuthatches weigh sunflower seeds. *The Auk* 114: 298-299.
- Heinrich, B. and J. Pepper. 1998. Influence of competitions on caching behavior in the common raven, Corvus corax. *Anim. Behav.* 56: 1083-1090.
- Boarman, B. & B. Heinrich, 1999. Common Raven (Corvus corax). In: A. Poole and F. Gill. *Birds of North America*. 476: 1-32.
- Heinrich, B. 1999. Sociobiology of ravens: conflict and cooperation. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin* 37: 13-22.
- Heinrich, B. 1999. Planning to facilitate caching: Possible suet cutting by a common raven. *Wilson Bull.* 111: 276-278.
- Stahler, D.R., B. Heinrich and D.W. Smith. 2002. The raven's behavioral association with wolves. *Animal Behaviour* 64: 283-290.
- Bugnyar, T. and B. Heinrich. 2003. Hiding in food-caching ravens, Corvus corax. *Rev.Ethol.Suppl.*5, 57.
- Heinrich, B. 2004.Overnighting of Golden-crowned kinglets in winter. *Wilson Bull.*115:123-124.
- Bugnyar. T., M. Stoewe and B. Heinrich. 2004. Ravens, Corvus corax, follow gaze direction of humans around obstacles. *Proc.R. Soc. Lond. B* 271: 1331-1336
- Woods, W. A. Jr, B. Heinrich and R.D. Stevenson. 2005. Honeybee flight metabolism: does it depend upon air temperature? *J. Exp. Biol.* 208 (6):1161-1173.
- Heinrich, B. and T. Bugnyar. 2005. Testing problem solving in ravens: string-pulling to reach food. *Ethology* 111: 962-976.
- Bugnyar. T. and B. Heinrich, 2005. Food-storing ravens, Corvus corax, differentiate between knowledgeable and ignorant competitors . *Proc. R. Soc B* 272: 1641-1646.
- Bugnyar, T. and B. Heinrich. 2006. Pilfering ravens, Corvus corax, adjust their behaviour to social context and identity of competitors. *Animal Cognition* 9: 369-376.
- Bugnyar,T., M. Stoewe and B. Heinrich. 2007. The ontogeny of caching behaviour in ravens, Corvus corax. *Animal Behaviour* 74: 757-767.
- Heinrich, B. and T. Bugnyar. 2007. Just how smart are ravens? *Scientific American* 296 (4): 64-71.
- Stoewe,M., T. Bugnyar, B. Heinrich and K. Kotrschal. 2006. Effect of group size on approach to novel objects in ravens (Corvus corax). *Ethology* 112: 1079-1088.
- Heinrich, B. 2007. The origin of insect thermoregulation. *J. Exp. Biol.* 210: 177-179.
- Bugnyar,T. Schwab,C., Schloegl, Kotrschal,K. and B. Heinrich. 2007. Ravens judge competitors through experience with play-caching. *Current Biology*17: 1804-1808.

- Stoewe, M., T. Bugnyar, C. Schloegl, B. Heinrich, K. Kotrschal and E. Moestl. 2008. Corticosterone excretion patterns and affiliative behavior over development in ravens (*Corvus corax*). *Hormones and Behavior* 53: 208-216.
- Heinrich, B. 2008. The origin of insect thermoregulation studies. *Journal of Experimental Biology Classics*, 1923-1953: 35-38.
- Heinrich, B. 2011. Conflict, Cooperation and Cognition in the Common Raven. *Advances in Study of Behavior* Vol. 43: 189-234. Academic Press.
- Heinrich, B. 2012. A Heretofore Unreported Instant Color Change in a Beetle, *Nicrophorus tomentosus* Weber (Coleoptera: Silphidae). *Northeastern Naturalist* 19(2): 345-352
- Heinrich, B. 2013. The Biological Basis of Aesthetics and Art. *Evolutionary Psychology*. [www.epjournal.net](http://www.epjournal.net)- 2013, 11(1):1-9.
- Heinrich, B. 2013. Why Does a Hawk Build with Green Nesting Material? *Northeastern Naturalist* 20(2): 209-218.
- Heinrich, B. 2013 Coordinated Mass Movement of Blow Fly Larvae Diptera: Calliphoridae) *Northeastern Naturalist* 20(4): N23-N27.
- Heinrich, B. 2014. Redpoll Snow Bathing: Observations and Hypothesis. *Northeastern Naturalist* 21(4): N45-N52.
- Heinrich, B. 2014. American Chestnut Seed Dispersal and Regeneration. *Northeastern Naturalist* 21(4): 619-629
- Heinrich, B. 2015. Rapid Flower-Opening in *Iris pseudacoris*. *Northeastern Naturalist* 22 (3): N11-N14
- Heinrich, B. 2015. Tree Swallows' Feather-lining their Nest: An Anti-Parasitizing Strategy? *Northeastern Naturalist* 22 (3): 521-529.
- Heinrich, B. 2015. American Chestnut Caching by Red Squirrels. *Northeastern Naturalist* 22/4: N19-N21.
- Heinrich, B. 2016. Note on the Woodcock Rocking Display. *Northeastern Naturalist* 23/1: N4-N7.
- Heinrich, B. 2016. A Note on Iris Flower Anthesis: Mechanism and Meaning of Sudden Flower-Opening. *Northeastern Naturalist* 23:3, N12-N17.
- Heinrich, B. 2017. Winter Strategies of Ruffed Grouse in a Mixed Northern Forest. *Northeastern Naturalist* 24(7): B55-B71.
- Juice, Stephanie, and B. Heinrich. 2017. Overwintering Parasitism of *Callosamia promethea* (Saturniidae) (Drury) (Promethea moth) in a Northern Hardwood Forest. *Northeastern Naturalist* 24(3):317-330.
- Loretto, M.C, R. Schuster, I. G. Federspiel, B. Heinrich, T. Bugnyar. 2020. Contextual imitation in juvenile common ravens, *Corvus corax*. *Animal Behaviour* 163:127-134.
- Mazurowski, J., B. Heinrich, L. Heinrich, C. Loeb, & R. Rives. 2022. The Continues Spread of a Wild Population of American Chestnut Trees. *Northeastern Naturalist* (in press)

## Essays

- Heinrich, B. The Origin of Insect Thermoregulation Studies. In: Journal of Experimental Biology Classics 1923-1953. <http://jeb.biologists.org>
- Heinrich, B. and G. A. Bartholomew. 1972. Temperature control in flying moths. *Sci. Amer.* (June) 226:71-77.
- Heinrich, B. 1973. The energetics of the bumblebee. *Sci. Amer.* 228:96-102.
- Heinrich, B. 1974. What bees and flowers know. *NYT* 21 Feb.
- Heinrich, B. 1976. Bumblebee foraging and the economics of sociality. *Am. Scientist* 64: 384-395.
- Heinrich, B. 1977. The exercise physiology of the bumblebee. *Am. Sci.* 65:455-465.
- Heinrich, B. 1977. The game of the bees. *Horticulture* July 1977:39-45.
- Heinrich, B. and G. A. Bartholomew. 1979. The ecology of the African dung beetle. *Sci. Amer.* 241(5):146-156.
- Heinrich, B. 1980. Artful diners. *Natural History* 86:42-51.
- Heinrich, B. 1981. Energetics of honeybee swarm thermoregulation. *Sci. Am.* 244(6):146-160.
- Heinrich, B. (1986) Ravens on my mind. *Audubon* 88:74-77.
- Heinrich, B. (1986) Why is a robin's egg blue? *Audubon* 88:64-70.
- Heinrich, B. (1987). Flight into the Forest. p.31-38. In: *The World of Science*. G.L. Leithauser and M.P. Bell (eds.) Holt, Rinehart and Winston.
- Heinrich, B. (1987) Pacing: The lesson of the frogs. *Ultrarunning*, July-August, pp. 32-33. 32-33.
- Heinrich, B. (1987) Capsules for the Cargo of Life. *Science* Nov./Dec. 56-62.
- Heinrich B. 1987. Thermoregulation in winter moths. *Sci. Am.* 255:104-110.
- Heinrich, B. 1988. The Ravens' Feast. *Natural History*. Feb. 44-51.
- Heinrich, B. 1990. The Antifreeze of Bees. *Natural History* 7:52-58.
- Heinrich, B. 1991. Nutcracker Sweets. *Natural History* 2:4-8.
- Heinrich, B. 1991. The Boisterous Feast of The Ravens. *Harrowsmith* 31:18-22.
- Heinrich, B. 1991. From 800 Meters to Ultramarathon. In: *International Ultra Training* (A. Milroy, ed.) pp. 62-69.
- Heinrich, B. 1992. Red Dawn in the Spruce. *The Independent* (London) 1 April. 1992.
- Heinrich, B. 1993. Kinglets' Realm of Cold. *Natural History* 102:4-9.
- Heinrich, B. 1993. Comfort in a hive: heads you're hot, tails you're cold. *Natural History* 102(8):53-55.
- Heinrich, B. 1993. A Birdbrain Nevermore. *Natural History* 102(10):50-56.
- Heinrich, B. 1993. In The Shallows of The Platte. *Orion* 12(3):42-47.
- Heinrich, B. and H. Esch. 1994. Thermoregulation in Bees. *Am. Sci.* 82:164-170.
- Heinrich, B. 1994. Some like it Cold. *Natural History* 103(2):42-47.
- Heinrich, B. 1994. Of Bedouins, Beetles and Blooms. *Natural History* 103(5):52-59.
- Heinrich, B. 1994. What is Natural? *Discover* 15(6):40-43.
- Heinrich, B. 1995. Insect Thermoregulation. *Endeavour* 19:28-33.
- Heinrich, B. 1995. In Plain Sight. *Natural History*. 7/95:32-40.
- Heinrich, B. 1995. Bumblebee Ecology. *Wild Earth*. Summer 1995:45-47
- Heinrich, B. & Marzluff, J. 1995. How Ravens Share. *American Scientist*. 83:342-349.
- Heinrich, B. 1995. Ravens and the Inaccessible. *Orion* 14 (4):62-63.
- Heinrich, B. 1995. The Keys to Color. *Vermont Woodlands*. Autumn 1995: 19-21.
- Heinrich, B. 1996. When the Bough Bends. *Natural History*. 2(96):56-57.
- Heinrich, B. 1996. How honeybees regulate body temperature. *Bee World* 77:130-137.
- Heinrich, B. 1996. Insect Architects: Caddisfly larvae. *Wings*. Fall 1996. pp. 11-13.



- Heinrich, B. 1997. Construction for strength. *Vermont Woodlands*. Winter, 1997. pp. 16-19.
- Heinrich, B. 1997. Winter Moths. *Dragonfly* Jan./Feb. p. 20-21.
- Heinrich, B. 1998. North Woods. *Heron Dance*. 18: 13-14.
- Heinrich, B. 1998. Home Cooking. P.47 In: Eating Between the Lines: A Maine Writers' Cookbook.(ed. P. Doiron).
- Heinrich, B. 1998. A talent for killing. *Outside*. Fall, 1998.
- Heinrich, B. 1999. Caddisfly houses and net traps. In: Insect Lives (E. Hoyt & T. Schultz, eds.) p. 176-178. John Wiley & Sons. Inc. New York.
- Heinrich, B. 2000. Everyone into the Pool. *Natural History*,109(3):18-19.
- Heinrich, B. 2000. Pheobe Diary. *Natural History* 109(4): 14-15.
- Heinrich, B. 2000. The Artistry of Bird Nests. *Audubon*, 102(5): 24-31.
- Heinrich, B. 2001 Endurance Predator. *Outside*. 25(9): 70-76.
- Heinrich, B. 2001. Found Object (Polyphemus Moths). *Natural History*, 110(3): 26-27.
- Heinrich, B. 2001. Whose Woods? Does Maine need a National Park? *Northern Woodlands/summer* p.22-29.
- Heinrich, B. 2001. O Tannenbaum. *Natural History*. 110(10): 38-39.
- Heinrich, B. 2001. Stretching my Limits. *Highlights for Children*. November 2001, p.32
- Heinrich, B. 2001. Dream Deferred: A 50-mile Road Race. *Ultrarunning* (Jan. '01).
- Heinrich, B. 2002. Grand Opening. *Natural History*. 111(1): 26-27.
- Heinrich, B. 2002. Contact.pp. 72-81 In: Father Nature:Fathers as Guides to the Natural World (ed. S. Tag) Iowa Univ. Press. Iowa City.
- Heinrich, B. 2003. Die Raben: Schwarz, Scheu und Schlitzohrig. *Geo Magazine* 08/2003:41-56.
- Heinrich, B. 2003. Insect Thermoregulation. pp. 1119-1126. In: Encyclopedia of Insects (V. H. Resh and R.T. Cardé eds). Academic Press
- Heinrich, B. 2003. The View from my Spruce. P.50 In: On Wilderness Voices From Maine. (P.Austin, D. Bennett and R. Kimber, eds.) Tilbury House Publ. Gardiner, Maine.
- Heinrich, B. Night. In: Ecological Consequences of Artificial Night Light (C. Rich and T. Longcore, eds.)
- Heinrich, B. .2003.Of Bees, Birds and Brains. *Runners World*. October, p.63.
- Heinrich, B. 2003.Spring Buds. *Northern Woodlands/winter* 2003:54-57.
- Heinrich, B 2003. Wake up! Hibernation. *Northern Woodlands*. January
- Heinrich, B. 2004. Frogs, Fires and False Alarms. *Whole Terrain* 2003/2004:10-13.
- Heinrich, B. 2005. Corvids: The Crow Family pp. 445-447. In: M. Beckoff (Ed.) Encyclopedia of Animal Behavior. Greenwood Press. Westport, CT..
- Heinrich, B. 2005. Adapting to Ravens, pp 52-57. In: Gulls, Ravens and a Vulture: The Ornithological Paintings of James Wyeth .The Farnsworth Art Museum and Wyeth Center, Rockland , Maine. J.S. McCarthy, Augusta, ME.
- Heinrich, B. 2006. Timing is Everything. *Northern Woodlands/autumn* 2006:46-48.
- Heinrich. B. 2008. The Porcupine's Palate. *Northern Woodlands*
- Heinrich, B. 2008. Racing the Antelope. *Muse* 12 (6) 8-14.
- Heinrich, B. 2009.A Logger with four Feet and a Tail. *Northern Woodlands/autumn* 2009: 38-40.
- Heinrich, B. 2010. Which Bird Made That Nest? *Northern Woodlands/winter* 2009: 24-29..
- Heinrich, B. 2011. Chestnuts and Boundaries. *Whole Terrain* 18:17-19.

- Heinrich, B. 2011. Untangling the Bank pp.33-48. In: (Michael R. Canfield, Ed.) Field Notes on Science & Nature. Harvard Univ. Press, Cambridge, MA.
- Heinrich, B. 2012. The Tree That Shouldn't Be. Down East. September 2012, pp. 56-76.
- Heinrich, B. 2012. Night-flying Moths.pp.224-336. In: Ring T. Carde' and Vincent H. Resh: A World of Insects. Harvard University Press.
- Heinrich, B. 2012. The Bumblebee Colony Cycle. pp.338-357. In: Ring T. Carde' and Vincent H. Resh: A World of Insects. Harvard University Press.
- Heinrich, B. 2013. Biological Basis of Aesthetics and Art. *Evolutionary Psychology* 11(3): 743-861.
- Heinrich, B. 2013. Joel Babb: The Essence of What Is, p. 174-175 In: C. Little; *Nature & Culture: The Art of Joel Babb*. Hanover and London, University Press of New England.
- Heinrich, B. 2013. The Wasp Files. *Natural History*. 12/12-1/13:28-37.
- Heinrich, B. 2014. Fearless Nesting. *Natural History* 6/14: 10-11.
- Heinrich, B. 2014. Life in the Soil. *Natural History* 11/14:13-15.
- Heinrich, B. 2015. Chickadees in Winter: The advantage of associating in flocks and pooling experience. *Natural History* 3/15: 30-35.
- Heinrich, B. 2015. Curious Yellow: A foray into Iris behavior. *Natural History* 5/15: 13-15.
- Heinrich, B. 2015. Invisibility Cloak: How ruffed grouse foil predators in winter. *Natural History* 6/15: 12-15.
- Heinrich, B. 2015. The Snipe Hunt. *Natural History Magazine* 7/8 15: 12-15.
- Heinrich, B. 2015. False Assumptions: A matter of degrees. *Natural History*. 10/15:9-11.
- Heinrich, B. 2015. Twists and Turns: Uneven handedness. *Natural History Magazine*. 11/15:9-11.
- Heinrich, B. 2015. A Winter's Tale: Bird flocks. *Natural History* 12/15- 1/16:12-14.
- Heinrich, B. 2015. Optimism. *Field Notes*. vol. 27: July. pp.23-24.
- Heinrich, B. 2016. Woolly and Wondrous: Conspicuous cover. *Natural History* 2/16:12-13.
- Heinrich, B. 2016. Blue Jays in Touch: The subtleties of jay talk. *Natural History* 3/16: 10-13.
- Heinrich, B. 2016. The Spreading Chestnut Tree: Reason to be cheerful. *Natural History* 4/16:13-17.
- Heinrich, B. 2016. Building Codes: Different blueprints. *Natural History* 5/16:10-13.
- Heinrich, B. 2016. Metamorphosis: A frog prince hypothesis. *Natural History* 6/16: 9-11.
- Heinrich, B. 2016. Synchronicity: Amplifying the signal. *Natural History* 9/16: 10-13
- Heinrich, B. 2016. Squirrel Smarts: Tapping into sought-after food Supplies. *Natural History* 10/16:12-15.
- Heinrich, B. 2016. Conversing with a Sapsucker: A late summer fling. *Natural History* 11/16:13-15.
- Heinrich, B. 2016. Reading Tree Leaves: they can reveal a consumer's identity. *Nat. History*. 12/16-01/17: 10-11.
- Heinrich, B. 2016. That Blinding Flash of Beauty. *Field Notes*. Vol.27. pp.24.
- Heinrich, B. 2017. Rock-solid Foundation: Secrets of a long life. *Natural History* 02/17: 14-17.
- Heinrich, B. 2017. The Hunt (re African wild dogs; an African Safari) *Natural History* 03/17:12-17.
- Heinrich, B. 2017. Birds, Bees and Beauty. *Natural History* 04/17:14-17.
- Heinrich, B. 2017. Cohabiting with Elephants: A browsing relationship *Natural History* 05/17: 16-19.
- Heinrich, B. 2017. Cooperative Undertaking: Teaming with mites. *Natural History* 06/17: 14-17.
- Heinrich, B. 2017. A Diabolical Pair. *Natural History* 07-08/17:14-15.

Heinrich, B. 2017. Seeing the Light in the Forest. *Field Notes*. 29:16-17.

Heinrich, B. 2017. The Naturalist's Path: The Influence of People, Places, and Caterpillars. *Habitat*, Fall 2017:4-7.

Heinrich, B. 2017. The Crow's Song. *Natural History* 11/17: 10-13.

Heinrich, B. 2017. Whirligig Beetles: Making waves and quite a stink. *Natural History* 12/17-1/18.

Heinrich, B. 2017. Leaf Senescence; color change is incidental. *Natural History* 2/18:10-12.

Heinrich, B. 2018. Holing up in winter. *Natural History* 3/18:10-11.

Heinrich, B. 2018. A Cattail Moment. *Natural History* 4/18:14-15.

Heinrich, B. 2018. How to eat sunflower seeds. *Natural History* 5/18:9-11.

Heinrich, B. 2018. A Raven's Inscrutable Life. *Natural History* 6/18:14-17

Heinrich, B. 2018. Nature in the Cracks: Life among the ruins. *Natural History* 7/8:9-11.

Heinrich, B. 2018. Preface to "A Bog Walker's Companion," J.R.Longcore, J.E.Bird and R.Klose. (editors)

Heinrich, B. 2018. Flower Behavior: The evolution of sex appeals. *Natural History* 10/18:9-11.

Heinrich, B. 2018. A Weaver's Tale. *Natural History* 11/18:9-11.

Heinrich, B. 2018. The Lives of Trees in the Forest. *Natural History* 12/18-1/19: 12-15.

Heinrich, B. 2018. Natural Curiosity. *Field Notes* 30:8-9.

Heinrich, B. 2019. Surviving Winter. *Living Bird/Cornell Lab of Ornithology*. 12/1:25-32.

Heinrich, B. 2019. Making Tracks. *Natural History* 2/19: 9-11.

Heinrich, B. 2019. Life of the Bald-faced Hornet. *Natural History* 3/19:9-11.

Heinrich, B. 2019. Sapsucker Safety and a Solid Home. *Natural History* 4/19:9-11.

Heinrich, B. 2019. Ichneumon Identity. *Natural History* 5/19:10-13.

Heinrich, B. 2019. Bridging the Divide: Owls. *Natural History* 6/19: 9-11.

Heinrich, B. 2019. Standout Performance: Woodcocks. *Natural History* 10/19:9-11.

Heinrich, B. 2019. What's in a Name? The Art of Ichneumon Wasp Identification: *Field Notes* 31: 18-19.

Heinrich, B. 2019. Summer Leaf-fall. *Natural History* 11/19:9-11.

Heinrich, B. 2019. Longevity. *Natural History* 12/19-1/20: 9-11.

Heinrich, B. 2020. Species Ambiguity: *Natural History* 2/20: 9-11.

Heinrich, B. 2020. Getting the Buzz. *Natural History* 3/20:12-13.

Heinrich, B. 2020. The Travails of Tree Swallow Parenting. *Natural History* 4/20:9-11.

Heinrich, B. 2020. Biological Basis of aesthetics and art. In: *Aesthetic Literacy: a Book for Everyone* by Yuriko Saito, Richard Shusterman and Clive Cazeaux. (??)

Heinrich, B. 2020. Outbreaks. *Natural History* 5/20:9-11.

Heinrich, B. 2020. Whisper Songs. *Natural History* 6/20:9-11.h

Heinrich, B. 2020. A Disturbance on York Hill. *Field Notes* 32:19.

Heinrich, B. 2020. Homage to Trees. *Natural History* 7-8: 9-11.

Heinrich, B. 2020. A Fly's Wedding Party. *Natural History* 9/20:9-13.

Heinrich, B. 2020. Bird Waste Management. *Natural History*

Heinrich, B. 2020. Dangling by a Thread. *Natural History*11/20:12-13.

Heinrich, B. 2020. Getting to Know a Goose. *Natural History*12/20-1/21:9-11.

Heinrich, B. 2021. Exit Strategy (Building a Cocoon). *Natural History*. 2/21:9-11.

Heinrich, B. 2021. Cross-species Companionship. *Natural History*. 3/21:9-11.

Heinrich, B. 2021. Anthropomorphism. *Natural History* 4/9.

Heinrich, B. 2021. Living with Porcupines. *Natural History* 5/9-10.

Heinrich, B. 2021. All Run Together. *Natural History* 7-8/9.  
 Heinrich, B. 2021. My Wild Wildlife Life. *Maine Woodlands* 46 (7): 1-3.  
 Heinrich, B. 2021. Paper-Punching Tree Leaves. *Field Notes* 33:12.  
 Heinrich, B. 2021. Home Seekers in a Tight Market. 9: 9-11.  
 Heinrich, B. 2021. Redpoll Winter Games. *Natural History* 10/12-13.  
 Heinrich, B. 2021 The Road to Discovery. *Natural History* 10/12-13.  
 Heinrich, B. 2021/2022. Lilliputian Forests. *Natural History* 130:10-12  
 Heinrich, B. 2022. Food Coops: Blue Jays. *Natural History* 130: 12-15.  
 Heinrich, B. 2022 March- The Only Tree in the Forest. *Natural History* 130:9-11.  
 Heinrich, B. 2022. Maggots on the Move. *Natural History* 130:

Heinrich, B. The Science of Birds and Bees, Beauty and Art. In: Valery Vinogradov (ed.)  
 "Aesthetic Literacy." Mount Publishing (in press to appear in early 2022).  
 Heinrich, B. Chickadees in Winter, In: *Our Maine*, by Malcolm Hunter, Jr. Down East Books

### **EDITORIALS, ABSTRACTS AND BOOK REVIEWS**

Heinrich, B. (1972) Foraging energetics of bumblebees. *Am. Zool.* 12(3):202.  
 Heinrich, B. (1973) The energy crisis: A biological vantage point. *The New York Times*,  
 Sunday, November 25.  
 Heinrich, B. (1974) On bees and flowers. *The New York Times*, Thursday, February 21.  
 Heinrich, B. (1974) Lost opportunity? (a letter). *Science* 184:1131.  
 Heinrich, B. (1975) The invisible hand loses its grip. *Business and Society Review*, Winter, No.  
 12: 30-34.  
 Heinrich, B. (1976) A letter (reply to article). *Business and Society Review*, Spring, No. 17:  
 86-87.  
 Heinrich, B. and C. F. Sewall (1975) Bee lining. *National Geographic School Bulletin* 53:  
 466-469.  
 Heinrich, B. (1979) "ZZZZzzzzz MMMnmmmmmm." *The New York Times*, Friday, May 25.  
 Heinrich, B. (1979) Social Insects. *McGraw-Hill Yearbook of Science and Technology*, pp.  
 338-341.  
 Heinrich, B. (1979) A book review of "Sexual selection and reproductive competition" for  
*Science* 205:577-578.  
 Heinrich, B. (1980) Bees. *McGraw-Hill Encyclopedia of Science and Technology*, 5th edit.  
 Eppstein, M. J. and Heinrich, B. (1981) Pit-trapping as an optimal foraging strategy by ant  
 lions. *Am. Zool.* 21(4):995.  
 Heinrich, B. (1982) What is physiological ecology? *Bull. Ecol. Soc. Amer.* 63(4):343-344.  
 Heinrich, B. (1983) Book review of *Physiological Ecology* (Townsend and Calow, eds.).  
*Bioscience* 33:339.  
 Heinrich, P. (1983) Offering a reward: Feeding from flowers. pp. 20-21. *The Collins*  
*Encyclopedia of Animal Behavior*. P.J.B. Slater (ed.) Collins, London.  
 Heinrich, B. (1984) A book review of "The Dragon Hunters" by Frank Graham, Jr., *New York*  
*Times*, Oct. 14, 1984.

- Heinrich, B. and T. P. Mommsen (1984) Thermal Adaptations of winter moths. *Am. Zool.* 24, No. 3, p. 8A.
- Vogt, F.D. and Heinrich, B. (1984) Thermoregulation and demography of bumblebee colonies. *Am. Zool.* 24, No. 3, p. 7A.
- Heinrich, B. (1985) A letter. *Audubon* 87:99-100.
- Heinrich, B. (1986) A book review of "The Pleasures of Entomology: Portraits of Insects and the People who Study them" by Howard Evans, *Orion* 5:56-58.
- Heinrich, B. (1986) A book review of "Insects and Flowers: The Biology of a Partnership" by Friedrich Barth. *Orion* 5: 60-61.
- Vogt, D. and Heinrich, R. The response of workers to thermal stress in honeybee colony thermoregulation. *Am. Zool.* 25. No. 4.
- Heinrich, B. Thermoregulation 1987 Yearbook of Science and Technology. McGraw Hill. pp. 483-485.
- Heinrich, B. (1986) Book review of "Honeybee Ecology" by Thomas Seeley. *American Scientist* 74:677.
- Heinrich, B. (1986) "Bee" in *The World Book Encyclopedia* vol. B pp. 154-161. Edition 88A.
- Heinrich, B. (1987) Book review of "The Machinery of Nature" by Paul Ehrlich. *American Scientist* 75:641.
- Heinrich, B. (1987) Letter on nuclear winter debate. *Science* 235:831.
- Heinrich, B. (1988) Book review: "The Lore of Running" by Tim Noakes *Ultrarunning*. April. p. 24.
- Heinrich, B. (1989) Book review: "The Natural History and Behavior of North American Bee wolves" by H. E. Evans and K. M. O'Neill. *Am. Sci.* 77:288-289.
- Heinrich, B. 1991. Book review: *The Ways of Coprophiles (Dung Beetle Ecology* by I. Hanski and Y. Cambefort) *Science*:254:873-874.
- Heinrich, B. 1991. Letter: "Common Horse Sense." *Sci. Am.* 265:12.
- Heinrich, B. 1992. Book review: *Dances with Geese (Here am I - where are you?* by Konrad Lorenz with Michael Martys and Angelica Tipler). *New York Times Book Reviews*. Feb. 16, p. 19.
- Heinrich, B. 1993. Book review: *Insect Learning: Ecological and Evolutionary Perspectives* by D. R. Papaj and A. C. Lewis (eds.) *Science* 260:705-706.
- Heinrich, B. 1993. Book review: *Physiological Animal Ecology* by G. Louw. *American Scientist* 2:486.
- Heinrich, B. 1996. Book review: *Animal Minds*, by J. Gould and C.G. Gould. *Animal Behaviour*.
- Heinrich, B. 1996. 2A: What is the citizens' initiative all about? (Editorial) in *Maine Times* 29 (3): 5. 31 Oct., 1996.
- Heinrich, B. & Esch, H. 1997. Honeybee thermoregulation. *Science* 276: 1015.
- Heinrich, B. 1997. Book review: *The Raven*, by Derek Ratcliffe. *The Auk* 115: 267-268.
- Heinrich, B. 2000. Book review: *The Alex Studies*. By Irene Pepperberg. *New York Times*. Jan 30, p.12.
- Heinrich, B. 2000. Letter on brain size. *Natural History*. 2/00 p.8.
- Heinrich, B. 2001. Up close and intimate: How Henry David Thoreau found beauty in the pulse of life. *Los Angeles Times Book Review*. July 8
- Heinrich, B. 2002. Book review: *A Natural History of Bumblebees*. By Carol A. Kerns and James D. Thomson. *Quarterly Review of Biology*. 77:206-207.
- Heinrich, B. 2002. *The Race to Understand the Outlier*. Book review: *The Lore of*

- Running, by T. Noakes. *Science* 296:51.
- Heinrich, B. 2003. New Buzz on the Humble-Bee. Book review of *Bumblebee*, by David Goulson. *Science* 302: 295-306.
- Heinrich, B. 2003. Foreword to Don Allison (ed.) of *A Step Beyond: A Definitive Guide to Ultrarunning*.
- Heinrich, B. 2004. Hibernation, Insulation and Caffeination. Op- Ed NYT 31 Jan.
- Heinrich, B. 2004. The skinny on aging. *American Sci.* 92/1:5
- Heinrich, B. 2004. In his own world. A book review of *Niko's Nature* by Hans Kruuk. *New Scientist* 24 July 2004 p.54
- Heinrich, B. 2004. The Selborne Pioneer: Gilbert White as Naturalist and Scientist, a Re-examination., (Book Review). *The Auk* 121:270-272.
- Heinrich, B. 2005. Book review: Donald e. Kroodsma's *How to Listen to Birds*. *Scientific American*, May 2005:94-96.
- Heinrich, B. 2005. Book review: Gordon M. Burghardt's *The Genesis of Animal Play: Testing the Limits*. *Nature* 434:273-274.
- Heinrich, B. 2005. Talking to the Animals. Op-Ed NYT 26, August.
- Heinrich, B. 2007. Book review of Charlotte Sleigh's "Six Legs Better: A Cultural History of Myrmecology." *Quart. Rev. of Biology* 82 (3): 261.
- Heinrich, B. 2009. Book review of Roger Deakin's "Wildwood: A Journey Through Trees." *The Washington Post Book World*. January 4-10.
- Heinrich, B. 2010. Book review of Frederick R. Gehlbach's "The Eastern Screech Owl: Life History, Ecology, and Behavior in the Suburbs and Countryside." *The Wilson Journal of Ornithology* 122(1): 202-203.
- Heinrich, B. 2010. The Fittest Books on Animal Survival. *Wall Street Journal* , 23-24 Oct. 2013.
- Heinrich, B. 2013. Rejuvenation of Our Forests (American Chestnuts). NYT op-ed 21 December, 2013 p.A19.  
file:///Users/berndheinrich/Desktop/manuscripts/Revitalizing%20Our%20Forests%20-%20NYTimes.com.webarchive.
- Heinrich, B. 2013. Book review of Robert E. Page Jr. *The Spirit of the Hive: The Mechanisms of Social Evolution*. *Animal Behaviour* 86: 1108.
- Heinrich, B. 2015. Book Review of *The Passenger Pigeon*- *Quart. Rev. Biol.* 90(2): 237.
- Heinrich, B. 2015. Foreword/Introduction to: *What Should a Clever Moose Eat: Natural History, Ecology, and the North Woods*, by John Pastor. Island Press
- Heinrich, B. 2017. Book Review of: *The Wonder of Birds* by Jim Robbins. *Wall Street Journal*, 2 June, 2017.
- Heinrich, B. 2020. Foreword to: *A Land of Milk and Honey: A History of Vermont Beekeeping* by Bill Mares & Ross Conrad

## BOOK CHAPTERS

- Heinrich, B. 1973. Mechanisms of insect thermoregulation. In: W. Weiser (ed.), Effects of Temperature on Ectothermic Organisms. Springer- Verlag, Berlin, Heidelberg, New York. pp. 139-150. Heinrich, B. 1975. The role of energetics in

- bumblebee-flower-interactions. In: Coevolution of Animals and Plants. L. E. Gilbert and P. H. Raven (eds.), Univ. of Texas Press, Austin and London. pp. 141-158.
- Heinrich, B. 1975. Thermoregulation and flight energetics of desert insects. In: N. F. Hadley (ed.), Environmental Physiology of Desert Organisms (a symposium). Dowden, Hutchinson and Ross, Stroudsburg, Pennsylvania.
- Heinrich, B. 1977. Pollination energetics: An ecosystem approach. In: W. J. Mattson (ed.), The Role of Arthropods in Forest Ecosystems. Chapter 5, pp. 41-46. Springer-Verlag, New York.
- Kammer, A. E. and B. Heinrich. 1978. Insect flight metabolism. In: J. W. L. Beament, J. E. Treherne, and V. B. Wigglesworth (eds.), Advances in Insect Physiology 13: 133-228.
- Heinrich, B. 1978. The economics of insect sociality. In: J. Krebs and N. Davies (eds.), Behavioral Ecology: An Evolutionary Approach, pp. 97-128. Blackwell, London.
- Heinrich, B. 1979. Flexibility of foraging behavior of bumblebees. Proc. IVth International Symposium on Pollination. Md. Agric. Exp. Sta. Misc. Publ. 1: 453-457.
- Waddington, K. D. and B. Heinrich. 1980. Patterns of movement and floral choice by foraging bees. p. 215-230 In: Foraging Behavior: Ecological, Ethological and Psychological Approaches. A. C. Kamil and T. D. Sargeant (eds.). Garland, New York (1981).
- Heinrich, B. 1981. A historical survey. In: Insect Thermoregulation. B. Heinrich (ed.). John Wiley & Sons, Inc., New York.
- Heinrich, B. 1981. Ecological and evolutionary perspectives. pp. 236-302. In "Insect Thermoregulation", B. Heinrich (ed.). John Wiley & Sons, Inc., New York.
- Seeley, T. and B. Heinrich 1981. Regulation of temperature in the nests of social insects. pp. 160-234. In: Insect Thermoregulation, B. Heinrich (ed.). John Wiley & Sons, Inc., New York.
- Jensen, W. A., B. Heinrich, D. B. Wake, and M. H. Wake. 1979. Biology. (Chapters 14-25 by B. Heinrich). Wadsworth Publishing Co., Belmont, CA.
- Heinrich, B. 1981. Temperature regulation during locomotion in insects. pp. 391-417. In: Locomotion and Energetics in Arthropods, C. F. Herreid II and C. F. Fortner (eds.). Plenum, New York & London, 1981.
- Heinrich, B. 1982. Optimal foraging strategy: I. Flower choice by Bumble Bees. pp. 63-68. In: Insect Behavior (J. R. Mathews and R. W. Mathews, eds.). Westview Press, Boulder Colorado.
- Heinrich, B. 1982. Optimal foraging strategy: II. Foraging movements of Bumble Bees. Ibid.
- Heinrich, B. 1983. Insect foraging energetics. pp. 187-214. In: Handbook of Experimental Pollination Biology, E. C. Jones and R. J. Little (eds.). Van Nostrand Reinhold Co., Inc., New York.
- Heinrich, B. 1984. The social physiology of temperature regulation in honeybees. In: Fortschritte der Zoologie, Vol. 31:343-406 B. Hölldobler and M. Lindauer (eds.) G. Fisher Verlag. Stuttgart, New York.
- Heinrich, B. 1984. Learning in Invertebrates, in Marler, P. and Terrace, H. S. eds. The Biology of Learning. Dahlem Konferenzen. Berlin, Heidelberg, New York, Tokyo: Springer-Verlag, pp. 135-147.
- Heinrich, B. 1987. Bumblebee Economics. pp. 369-384. In Hypoxia and Cold (J. R. Sutton and C. Houston and G. Coates, eds.) Praeger Press, New York.
- Heinrich, B. 1987. Thermoregulation by individual honeybees. pp. 102-111. In "Neurobiology and Behavior of the Honeybee" R. Menzel and A. Mercer (eds.) Springer Verlag, Heidelberg.

- Heinrich, B. 1988. Food sharing reciprocity and communication in the Raven, Corvus corax. pp. 285-311. In "The Ecology of Social Behavior" C. Slabodchikoff (ed.) Academic Press, New York.
- Heinrich, B. 1993. How avian predators constrain caterpillar foraging. pp. 224-247. In: Caterpillars: Ecological and Evolutionary Constraints on Foraging (N.E. Stamps and T.M. Casey, Editors). Chapman & Hall, New York, and London.
- Heinrich, B. 1994. The color of a bird's egg. pp. 202-213. In: The Nature of Nature. W. H. Shore ed. Harcourt Brace & Co. New York.
- Heinrich, B. 2000. Testing Insight in Ravens. In Evolution of Cognition pp. 289-305 (C. Heyes and L. Huber, eds.). MIT Press, Boston.
- Heinrich, B. 1997. Insect Architects: Caddisfly larvae, pp.18-23. In: Streamkeepers: Aquatic Insects as Biomonitors. The Xerces Society. Portland, OR.
- Heinrich, B. and R. Smolker. 1998. Play in common ravens (Corvus corax). pp. 27-44. In Animal Play: Evolutionary, Comparative, and Ecological Perspectives (M. Beckoff and J. A. Byers, eds.) Cambridge Univ. Press.
- Heinrich, B. 2000. Hopping Mad. In: Smile of a Dolphin. pp.98-99. (M. Beckoff, ed.) Discovery Books, NY..
- Boerman, W. I. and Heinrich, B. 2000. The Common Raven. In: The Birds of North America. A. Poole (man. editor). Acad. of Nat. Sciences, Wash., D.C.
- Heinrich, B. 2001. "Endurance Predator" In: Best of American Scientific and Nature Writing. (B. Bilger & E.O. Wilson, eds.) Houghton Mifflin Co.
- Heinrich, B. and Chavarria, G. 2001. Bumble bee energetics and conservation. pp. 69-84. In: C. Stubbs and F. Drummond (eds.) Bees and Crop Pollination : Crises, Crossroads, and Conservation. Thomas Say Publications in Entomological Society: Proceedings. Lanham, Maryland.
- Heinrich, B. 2002. Raven Consciousness: Empirical and Theoretical Perspectives on Animal Cognition. pp. 46-52. In: The Cognitive Animal. (M. Bekoff, C. Allen & G.M. Burghardt, eds). MIT Press, Cambridge, MA.
- Heinrich, B. 2003. "Contact!" In: Fathering and the Natural World. (P. Piper & S. Tag, eds.). Iowa University
- Heinrich, B. 2003. "Thermoregulation" In : Encyclopedia of Insects. (V.H. Resh & R.T. Carde, eds.) pp.1119-1126. Academic Press.
- Heinrich, B. 2003. The View from my Spruce. P.50 In: On Wilderness Voices From Maine. (P. Austin, D. Bennett and R. Kimber, eds.) Tilbury House Publ. Gardiner, Maine.
- Heinrich, B. 2004. Corvids. Pp 445-447. In Encyclopedia of Animal Behavior. M. Bekoff (ed.) Greenwood Press, Westport, CT and London.
- Heinrich, B. 2005. Ravens: Adapting to Ravens. pp.52-57. In: Gulls, Ravens and a Vulture: The Ornithological Paintings of James Wyeth . V. K. Woodhull (ed). Farnsworth Art Museum and Wyeth Center, Rockland. Maine.
- Heinrich, B. 2005. The Race. In: Cummings and King (Eds.). Running in the Zone: A Handbook for Seasoned Athletes. Trafford Publishing.
- Heinrich, B. 2006. A naturalist's view of insect flight muscle, in Jim Vigoreaux (Ed) Nature's Versatile Engine: Insect Flight Muscle. Landes Bioscience Publ. , Georgetown, Texas and Springer Science, NY, NY.
- Heinrich, B. 2005. Lights in the night. In: Ecological Consequences of Artificial Night Light. C. Rich and T. Longcore (eds).



- Heinrich, B. 2008. A Travelling Companion and Adams Hill. Pp.89-98. In McNair, W. (Ed.). A Place Called Maine. Down East Books, East Peoria, Ill.
- Heinrich, B. 2008. Introduction to: Nest and Egg, by R. Purcell, L. Hall & R. Corado. Harvard University Press, Cambridge
- Heinrich, B. 2009. Animal consciousness: ravens. p .48-50 I: T. Baynes, A. Cleremans & P. Wilkin (Eds.) The Oxford Companion to Consciousness (Oxford University Press).
- Heinrich, B. 2010. Introduction. In: Thoreau's Maine Woods by Dan Togyne. Down East Books.
- Heinrich, B. 2010. Our Edens: Ecological Homes. Pp. 331-336. In: K.D. Moore & M.P. Nelson (eds.). Moral Ground: Ethical Action for a Planet in Peril. San Antonio, TX : Trinity University Press.
- Heinrich, B. 2010. The Fittest Books on Animal Survival. Wall Street Journal. Oct.23-24.
- Heinrich, B. 2011 Untangling the Bank, pp. 33-48. In : Michael Canfield (ed). Harvard University Press
- Heinrich, B. 2011. Introduction to : The Endurance Paradox, by Thomas Wipple and Robert Eckhardt
- Heinrich, B. 2011 Introduction to; Raven Days and dog Nights, by John and Colleen Marzluff
- Heinrich, B. 2012. The Future of my Forest. pp. 50-55. In: Niall Dunn (ed.). A Native Plant Reader. Brooklyn Botanical Garden.
- Heinrich, B. 2013. Programmed Behaviour, Learning, and Knowing: Caterpillars to Ravens. In: A. Wesel, R. Menzel and G. Tembroch (eds.). Quo Vadis, Behavioural Biology? Past, Present, and Future of an Evolving Science. Nova Acta Leopoldina 380(111): 369-396.
- Heinrich, B. 2015. The Life of Soil. pp.82-86, In: B. Richardson (ed.) Dirt: 36 Writers Get Down to Earth. Univ. New England Press, Lebanon, NH
- Heinrich, B. 2016. Introduction to: "What Should a Clever Moose Eat?", by John Pastor

## BOOKS

- Heinrich, B. 1979. Bumblebee Economics. Harvard Univ. Press, Cambridge, MA. pp. 245.
- Heinrich, B. 1981. Insect Thermoregulation. John Wiley & Sons. New York. 329 pp.
- Heinrich, B. 1984. In a Patch of Fireweed: A Biologist's Life in the Field. Harvard Univ. Press., Cambridge, MA. 194 pp.
- Heinrich, B. 1987. One Man's Owl. Princeton University Press, Princeton. pp. 224.
- Heinrich, B. 1989. Ravens in Winter. Summit Books of Simon & Schuster. New York, N.Y. 379 pp.
- Heinrich, B. and A. Calaprice.1990. An Owl in the House. Little, Brown & Co. Boston and London. pp. 119.
- Heinrich, B. 1993. The Hot-blooded Insects: Mechanisms and Evolution of Thermoregulation. 601 pp. Harvard University Press, Cambridge, MA.
- Heinrich, B. 1994. A Year in the Maine Woods. Addison & Wesley, Boston, MA.
- Heinrich, B. 1996. The Thermal Warriors. Harvard University Press. pp. 221.
- Heinrich, B. 1997. The Trees in my Forest. HarperCollins, N. Y. pp. 237.
- Heinrich, B. 1999. Mind of the Raven: Investigations and Adventures with Wolf-Birds HarperCollins, NY pp. 380.
- Heinrich, B. 2001. Racing the Antelope: What Animals Can Teach Us About Running and

- Life. (Re-issued as "Why We Run"). HarperCollins, NY. pp 292.
- Heinrich, B. 2003. The Winter World: The Ingenuity of Animal Survival. HarperCollins, NY pp347.
- Heinrich, B. 2004. The Geese of a Beaver Bog. HarperCollins, NY. pp. 217.
- Heinrich, B. 2007. The Snoring Bird: My Family's Journey Through a Century of Biology. HarperCollins, NY, 461pp.
- Heinrich, B. 2009. The Summer World. HarperCollins, NY. pp. 253
- Heinrich, B. 2010. Nesting Season: Cuckoos, Cuckolds and the Evolution of Monogamy. Harvard University Press, Cambridge, MA. pp. 337.
- Heinrich, B. 2012. Life Everlasting: The Animal Way of Death. Houghton Mifflin Harcourt. Boston. 236 pp.
- Heinrich, B. 2014. The Homing Instinct: Meaning and Mystery in Animal Migration. Houghton Mifflin Harcourt. Boston. pp. 352.
- Heinrich, B. 2016. One Wild Bird at a Time: Portraits of Individual Lives. Houghton Mifflin Harcourt. Boston. 210 pp.
- Wheelwright, N.T. & B. Heinrich, 2018. The Naturalist's Notebook. Storey Publishing. North Adams. 208 pp.
- Heinrich, B. 2018. A Naturalist at Large: The Best Essays by Bernd Heinrich. Houghton Mifflin Harcourt, Boston. 218 pp.
- Heinrich, B. 2020. White Feathers: The Nesting Lives of Tree Swallows. Houghton Mifflin Harcourt, Boston . 232 pp.
- Heinrich, B. 2021. Racing the Clock: Running Across a Lifetime. HarperCollins. 208 pp.
- Heinrich, B. 2022. Seasons of the Northern Forest (in prep.)
- Heinrich, B. 2022. Art and the Beauty of Nature (in prep.)