

Section 12.2

Boutilier RG, Aughton P, Shelton G (1984). O₂ and CO₂ transport in relation to ventilation in the Atlantic mackerel, *Scomber scombrus*. *Canadian Journal of Zoology* 62: 546-554.

Feder ME, Booth DT (1992). Hypoxic boundary layers surrounding skin-breathing aquatic amphibians: occurrence, consequences and organismal responses. *Journal of Experimental Biology* 166: 237-251.

Guimond RW, Hutchison VH (1973). Aquatic respiration: an unusual strategy in the hellbender *Cryptobranchus alleganiensis alleganiensis* (Daudin). *Science* 182: 1263-1265.

Hughes GM (1958). The mechanism of gill ventilation in three freshwater teleosts. *Journal of Experimental Biology* 35: 807-823.

Hutchison VH, Haines HB, Engbretson G (1976). Aquatic life at high altitude: respiratory adaptations in the Lake Titicaca frog, *Telamatabius culeus*. *Respiration Physiology* 27: 115-129.

Jones DR, Schwarzfeld T (1974). The oxygen cost to the metabolism and efficiency of breathing in trout (*Salmo gairdneri*). *Respiration Physiology* 21: 241-254.

Piiper J, Baumgarten-Schumann D (1968). Effectiveness of O₂ and CO₂ exchange in the gills of the dogfish (*Scyliorhinus stellaris*). *Respiration Physiology* 5: 338-349.

Piiper J, Scheid P, Perry SF, Hughes GM (1986). Effective and morphometric oxygen-diffusing capacity of the gills of the elasmobranch *Scyliorhinus stellaris*. *Journal of Experimental Biology* 123: 27-41.

Rombough PJ, Ure D (1991). Partitioning of oxygen uptake between cutaneous and branchial surfaces in larval and young juvenile Chinook salmon *Oncorhynchus tshawytscha*. *Physiological Zoology* 64: 717-727.

Wells MJ, Smith PJS (1985). The ventilation cycle in *Octopus*. *Journal of Experimental Biology* 116: 375-383.

Section 12.3

Barnhart MC, McMahon BR (1987). Discontinuous carbon dioxide release and metabolic depression in dormant land snails. *Journal of Experimental Biology* 128: 123-138.

Banzett RB, Butler JP, Nations CS, Barnas GM, Lehr JL, Jones JH (1987). Inspiratory aerodynamic valving in goose lungs depends on gas density and velocity. *Respiration Physiology* 70: 287-300.

**Butler, Brown, Stephenson & Speakman, *Animal Physiology*
Primary Research Articles**

Brainerd EL, Liem KF, Samper CT (1989). Air ventilation by recoil aspiration in polypterid fishes. *Science* 246: 1593-1595.

Boutilier RG, Shelton G (1986). Gas exchange, storage and transport in voluntarily diving *Xenopus laevis*. *Journal of Experimental Biology* 126: 133-155.

Burggren WW, West NH (1982). Changing respiratory importance of gills, lungs and skin during metamorphosis in the bullfrog *Rana catesbeiana*. *Respiration Physiology*. 47: 151-164.

Carrier DR (1996). Function of the intercostals muscles in trotting dogs: ventilation or locomotion? *Journal of Experimental Biology* 199 1455-1465.

Cieri RL, Craven BA, Schachner ER, Farmer CG (2014). New insight into the evolution of the vertebrate respiratory system and the discovery of unidirectional airflow in iguana lungs. *Proceedings of the National Academy of Sciences USA* 111: 17218-17223.

Codd JR, Boggs DF, Perry SF, Carrier DR (2005). Activity of three muscles associated with the uncinat processes of the giant Canada goose, *Branta canadensis maximus*. *Journal of Experimental Biology* 208: 849-857.

Farmer CG, Sanders K (2010). Unidirectional airflow in the lungs of alligators. *Science* 327: 338-340.

Frappell FB, Mortola JP (2000). Respiratory function in a newborn marsupial with skin gas exchange. *Respiratory Physiology* 120: 35-45.

Frappell PB, Hinds DS, Boggs DF (2001). Scaling of respiratory variables and the breathing pattern in birds: an allometric and phylogenetic approach. *Physiological and Biochemical Zoology* 74: 75-89.

Frappell PB, MacFarlane PM (2006). Development of the respiratory system in marsupials. *Respiratory Physiology & Neurobiology* 154: 252-267.

Full RJ (1986). Locomotion without lungs: energetics and performance of a lungless salamander. *American Journal of Physiology* 251: R775-R780.

Gans C, Hughes GM (1967). The mechanism of lung ventilation in the tortoise *Testudo graeca* Linné. *Journal of Experimental Biology* 47: 1-20.

Legrand, A. and De Troyer, A. (1999). Spatial distribution of external and internal intercostals activity in dogs. *The Journal of Physiology* 518: 291-300.

Makanya AN, Mortola JP (2007). The structural design of the bat wing web and its possible role in gas exchange. *Journal of Anatomy* 211: 687-697.

Mitchell G, Skinner JD (2011). Lung volumes in giraffes, *Giraffa camelopardalis*. *Comparative Biochemistry and Physiology A* 158: 72-78.

Rahn H, Paganelli CV, Ar A (1974). The avian egg: air-cell gas tension, metabolism and incubation time. *Respiration Physiology* 22: 297-309.

Schachner ER, Cieri RL, Butler JP, Farmer CG (2014). Unidirectional pulmonary airflow patterns in the savannah monitor lizard. *Nature* 506: 367-371.

Tickle PG, Ennos AR, Lennox LE, Perry SF, Codd JR (2007). Functional significance of the uncinata processes in birds. *Journal of Experimental Biology* 210: 3955-3961.

Vitalis, T. Z. and Shelton, G. (1990). Breathing in *Rana pipiens*: mechanism of ventilation. *Journal of Experimental Biology*. 154, 537-556.

Wang N, Banzett RB, Nations CS, Jenkins FA (1992). An aerodynamic valve in the avian primary bronchus. *Journal of Experimental Zoology* 262: 441-445.

Wangensteen OD (1972) .Gas exchange by a bird's embryo *Respiration Physiology* 14: 64-74.

West JB (2001). Snorkel breathing in the elephant explains the unique anatomy of its pleura. *Respiration Physiology*. 126: 1-8.

Section 12.4

Hetz SK, Bradley TJ (2005). Insects breathe discontinuously to avoid oxygen toxicity. *Nature* 433: 516-519.

Hughes GM, Mill PJ (1966). Patterns of ventilation in dragonfly larvae. *Journal of Experimental Biology* 44: 317-333.

Marais E, Klok CJ, Terblanche JS, Chown SL (2005). Insect gas exchange patterns: a phylogenetic perspective. *Journal of Experimental Biology* 208: 4495-4507.

Matthews PGD, White CR (2011). Regulation of gas exchange and haemolymph pH in the cockroach, *Nauphoeta cinerea*. *Journal of Experimental Biology* 214: 3062-3073.

Matthews PGD, Snelling EP, Seymour RS, White CR (2012). A test of the oxidative damage hypothesis for discontinuous gas exchange in the locust *Locusta migratoria*. *Biology Letters* 8: <https://doi.org/10.1098/rsbl.2012.0137>

**Butler, Brown, Stephenson & Speakman, *Animal Physiology*
Primary Research Articles**

Rahn H, Paganelli CV (1968). Gas exchange in gas gills of diving insects. *Respiration Physiology* 5: 145-164.

Schimpf NG, Matthews PGD, White CR (2012). Cockroaches that exchange respiratory gases discontinuously survive food and water restriction. *Evolution* 66: 597-604.

Schimpf NG, Matthews PGD, White CR (2013). Discontinuous gas exchange exhibition is a heritable trait in speckled cockroaches *Nauphoeta cinerea*. *Journal of Evolutionary Biology* 26: 1588-1597.

Schmitz A, Perry SF (1999). Stereological determination of tracheal volume and diffusing capacity of the tracheal walls in the stick insect *Carausius morosus* (Phasmatodea, Lonchodidae). *Physiological and Biochemical Zoology* 72: 205-218.

Snelling EP, Duncker R, Jones KK, Fagan-Jeffries EP, Seymour RS (2017). Flight metabolic rate of *Locusta migratoria* in relation to oxygen partial pressure in atmospheres of varying diffusivity and density. *Journal of Experimental Biology*. 220: 4432-4439.

Weis-Fogh T (1964). Diffusion in insect wing muscle, the most active tissue known. *Journal of Experimental Biology* 41: 229-256

Westneat MW, Betz O, Blob RW, Fezzaa K, Cooper WJ, Lee W-K (2003). Tracheal respiration in insects visualised with synchrotron x-ray imaging. *Science* 299: 558-560

White CR, Blackburn TM, Terblanche JS, Marais E, Gibernau M, Chown SL (2007). Evolutionary responses of discontinuous gas exchange in insects. *Proceedings of the National Academy of Sciences USA* 104: 8357-8361.