

## LIST OF PUBLICATIONS

Papers in refereed journals, symposia, book chapters, monographs

1. I. Lund, K. Johansen, J. Krog & S. Birkeland. The change in vascular resistance of the dog's brain on perfusion with cold blood and the modifying effect of CO<sub>2</sub> and trimetaphancamphorsulphate. *Acta Anaesth. Scand.* 2, 149-163, 1958.
2. K. Johansen & J. Krog. Diurnal body temperature variations and hibernation in the birch mouse, *Sicista betulina*. *Amer. J. Physiol.* 196(6), 1200-1204, 1959.
3. K. Johansen. The influence of temperature on the electrocardiograms of some northern reptiles. *Acta Physiol. Scand.* 46, 346-357, 1959.
4. K. Johansen. Circulation in the three-chambered snake heart. *Circulation Research* VII(6), 828-832, 1959.
5. K. Johansen. Heart activity during experimental diving of snakes. *Amer. J. Physiol.* 197(3), 604-606, 1959.
6. K. Johansen. Notes on the blue-spotted morph of *Augins fragilis* and its first finding in Scandinavia. *N. Mag. T. Zool.* 8, 61-63, 1959.
7. K. Johansen & J. Krog. Peripheral circulatory response to submersion asphyxia in the duck. *Acta Physiol. Scand.* 46, 194-200, 1959.
8. J. Krog & K. Johansen. Construction and characteristics of Teflon-covered polarographic electrode for intravascular oxygen determination. *Rev. of Scient. Instr.* 30, 108-109, 1959.
9. K. Johansen & J. Krog. Polarographic determination of intravascular oxygen tensions in vivo. *Acta Physiol. Scand.* 46, 228-233, 1959.
10. K. Johansen & R. Hol. A cineradiographic study of the snake heart. *Circulation Research* VIII(1), 253-259, 1960.
11. K. Johansen. Circulation in the hagfish, *Myxine glutinosa* L. *Biol. Bull.* 118, 289-295, 1960.
12. R. Hol & K. Johansen. A cineradiographic study of the central circulation in the hagfish, *Myxine glutinosa* L. *J. Exp. Biol.* 37, 469-473, 1960.
13. K. Johansen & R. Hol. A cineradiographic study of respiration in *Myxine glutinosa* L. *J. Exp. Biol.* 37, 474-480, 1960.
14. J. Krog & K. Johansen. The relation between muscular blood flow and oxygen tension as measured polarographically. *Acta Chir.*

- Scand. Supp 253, 162-167. 1960.
15. G. Semb, J. Krog & K. Johansen. Renal metabolism and blood flow during local hypothermia, studied by means of renal perfusion in situ. Acta Chir. Scand. Suppl. 253, 196-202, 1960.
  16. R. Ingebrigtsen, K. Johansen, O. Muller & P. Wehn. Blood pressure of the proximal artery in experimental arterio-venous fistulas of long standing. Acta Chir. Scand. Suppl. 253, 134-141, 1960.
  17. P. Andersen, K. Johansen & J. Krog. Electroencephalogram arousal from hibernation in the birch mouse. Amer. J. Physiol. 199(3), 533-538, 1960.
  18. K. Johansen. Temperature regulation in the nine banded armadillo. Physiol. Zool. 34, 126-144, 1961.
  19. K. Johansen. Distribution of blood in the arousing hibernator. Acta Physiol. Scand. 52, 379-386, 1961.
  20. K. Johansen & A.W. Martin. Circulation in the cephalopod, Octopus dofleini. J. Comp. Biochem. Physiol. 5, 161-176, 1962.
  21. K. Johansen & M.J. Huston. Effects of some drugs on the circulatory systems in the intact, nonanesthetized cephalopod, Octopus dofleini. J. Comp. Biochem. Physiol. 5, 177-184, 1962.
  22. K. Johansen. Observations on the wood frog, Rana sylvatica, in Alaska. J. of Ecology 43, 146-147, 1962.
  23. K. Johansen. Buoyancy and insulation in the muskrat, Ondatra zibethicus. J. of Mammalogy 43, 64-68, 1962.
  24. K. Johansen. Heat exchange in the muskrat tail. Evidence for vasodilator nerves to the skin. Acta Physiol. Scand. 55, 160-169, 1962.
  25. K. Johansen. Evolution of temperature regulation in mammals. Proc. Symp. on Arctic Biol. Medicine, 58 pp. II. Comparative Physiology of Temperature Regulation, 1962.
  26. K. Johansen. Responses to heat and cold in lower mammals. Int. J. Biometeor 6, 3-28, 1962.
  27. K. Johansen. Double circulation in the Amphibian, Amphiuma tri-dactylum. Nature 194, 991-992, 1962.
  28. K. Johansen, R. Fänge & M. Waage-Johannessen. Relations between blood, sinus fluid and lymph in Myxine glutinosa. Comp. Biochem. Physiol. 7, 23-28, 1962.
  29. K. Johansen. Cardiac output and pulsatile aortic flow in the teleost, Gadus morhua. Comp. Biochem. Physiol. 7, 169-174, 1962.
  30. L.D. Carlson, E. Heberling, K. Miller, K. Johansen & T. Adams. Heat balance in man sleeping in a cold environment. A.A.L.

Technical Report. U.S. Air Force, 1962.

31. K. Johansen. The cardiovascular system of Myxine glutinosa. In: The Biology of Myxine glutinosa. Oslo Univ. Press, 289-316, 1963.
32. K. Johansen & R. Strahan. The respiratory system of Myxine glutinosa. In: The Biology of Myxine glutinosa. Oslo Univ. Press, 352-377, 1963.
33. O.B. Reite, J. Krog & K. Johansen. Development of Bradycardia during submersion asphyxia in the duck. Nature 200, 684-685, 1963.
34. K. Johansen & T. Aakhus. Central cardiovascular responses to submersion asphyxia in the duck. Am J. Physiol. 205, 1167-1171, 1963.
35. K. Johansen. Cardiovascular dynamics in the Amphibian, Amphiuma tridactylum. Norwegian Monographs on Medical Science, 1963, pp. 82. (The above is also published as supplementum 217, vol. 60, Acta Physiol. Scand.).
36. K. Johansen, J. Krog and O. Reite. Autonomic nervous influence on the heart of the hypothermic hibernator. Finnish Academy of Sciences. Series A. IV., 245-255, 1964.
37. K. Johansen & O.B. Reite. Cardiovascular responses to vagal stimulation and cardio-accelerator nerve blockade in birds. J. Comp. Biochem. Physiol. 12, 479-487, 1964.
38. K. Johansen. Regional distribution of circulating blood during submersion asphyxia. Acta Physiol. Scand. 62, 1-9, 1964.
39. K. Johansen & T. Aakhus. Angiocardiography of the duck during submersion asphyxia. Acta Physiol. Scand. 62, 10-17, 1964.
40. K. Johansen. Osmoregulering hos marine vertebrater. Fauna 17, 105-120, 1964.
41. K. Johansen & A.W. Martin. Comparative aspects of cardiovascular function in vertebrates. American Physiol. Soc. Section 2. Circulation III, 2538-2614, 1965.
42. A.W. Martin & K. Johansen. Adaptations of the circulation in invertebrate animals. Handbook of Physiology, Section 2. Circulation III, 2545-2581, 1965.
43. K. Johansen. Cardioacceleration as a reflex and intrinsic effect. Tidskr. Norske Legefor., 3, 188-193, 1965.
44. K. Johansen. Cardiovascular dynamics in fishes, reptiles and amphibians. Ann. N.Y. Acad. Sci. 127, 414-442, 1965.
45. K. Johansen. An apparatus for recording of respiratory exchange in the cephalopod. Comp. Biochem. Physiol. 14, 377, 1965.

46. K. Johansen. Cardiac output in the large cephalopod, Octopus dofleini, J. Exp. Biol. 42, 475-480, 1965.
47. C. Lenfant & K. Johansen. Gas transport by the hemocyanin containing blood of the cephalopod, Octopus dofleini. Am. J. Physiol. 209, 991-998, 1965.
48. K. Johansen & A.W. Martin. Circulation in a giant earthworm. I. Contractile processes and pressure gradients in the large blood vessels. J. Exp. Biol. 43, 333-347, 1965.
49. K. Johansen. Dynamics of venous return in elasmobranch fishes. Hvalraadets Skrifter, 48, 94-100, 1965.
50. K. Johansen, D.L. Franklin & R.L. Van Citters. Aortic blood flow in free swimming elasmobranchs. Comp. Biochem. Physiol. 19, 151-160, 1966.
51. K. Johansen & C. Lenfant. Gas exchange in the cephalopod, Octopus dofleini. Am. J. Physiol. 210, 910-918, 1966.
52. C. Lenfant & K. Johansen. Respiratory function in the elasmobranch, Squalus suckleyi. Respiration Physiology 1, 13-29, 1966.
53. K. Johansen. Air breathing in the teleost, Symbranchus marmoratus. Comp. Biochem. Physiol. 18, 383-395, 1966.
54. K. Johansen, A.W. Martin & P. Sawaya. Some circulatory characteristics of the three-toed sloth. An. da Acad. Brasileira de Ciencias 38, 543-551, 1966.
55. K. Johansen & A.S.F. Ditadi. Double circulation in the giant toad, Bufo paracnemis. Physiol. Zool. 39, 140-150, 1966.
56. K. Johansen & A.W. Martin. Circulation in a giant earthworm, Glossoscolex giganteus. II. Respiratory properties of the blood and some patterns of gas exchange. J. Exp. Biol. 4, 165-172, 1966.
57. K. Johansen, C. Lenfant & G.C. Grigg. Respiratory properties of blood and responses to diving of the platypus, Ornithorhynchus anatinus (Shaw). Comp. Biochem. Physiol. 18, 597-608, 1966.
58. C. Lenfant, K. Johansen & G.C. Grigg. Respiratory properties of blood and pattern of gas exchange in the lungfish, Neoceratodus. Respiration Physiology 2, 1-21, 1966.
59. K. Johansen, C. Lenfant & G.C. Grigg. Respiratory control in the lungfish, Neoceratodus forsteri (Kreffft). Comp. Biochem. Physiol. 20, 835-854, 1967.
60. K. Johansen & C. Lenfant. Respiratory function in the South American lungfish, Lepidosiren. J. Exp. Biol. 46, 205-218, 1967.
61. K. Johansen & D. Hanson. Hepatic vein sphincters in elasmobranchs

- and their significance in controlling hepatic blood flow. *J. Exp. Biol.* 46, 195-203, 1967.
62. K. Johansen & R.L. Vadas. Oxygen uptake and responses to respiratory stress in sea urchins. *Biol. Bull.* 132, 16-22, 1967.
  63. C. Lenfant & K. Johansen. Respiratory adaptations in selected amphibians. *Respiration Physiology* 2, 247-260, 1967.
  64. K. Johansen & O.B. Reite. Effects of acetylcholine and biogenic amines on pulmonary smooth muscle in the African lungfish, *Protopterus aethiopicus*. *Acta Physiol. Scand.* 71, 248-252, 1967.
  65. J.A. Petersen & K. Johansen. Aspects of oxygen uptake in *Mesochoetopterus taylori*, a tube dwelling polychaete. *Biol. Bull.* 133, 600-605, 1967.
  66. K. Johansen & O.B. Reite. Influence of acetylcholine and biogenic amines on branchial, pulmonary and systemic vascular resistance in the African lungfish, *Protopterus aethiopicus*. *Acta Physiol. Scand.* 74(3), 465, 1968.
  67. K. Johansen, C. Lenfant & D. Hanson. Cardiovascular dynamics in lungfishes. *Zeitschr. für Vergl. Physiol.* 59, 157, 1968.
  68. K. Johansen & D. Hanson. Functional anatomy of the hearts of lungfishes and amphibians. *Amer. Zoologist* 8(2), 191-211, 1968.
  69. C. Lenfant & K. Johansen. Respiration in the African lungfish, *Protopterus aethiopicus*. I. Respiratory properties of blood and normal patterns of breathing and gas exchange. *J. Exp. Biol.* 49, 437-452, 1968.
  70. K. Johansen & C. Lenfant. Respiration in the African lungfish, *Protopterus aethiopicus*. II. Control of breathing. *J. Exp. Biol.* 49, 453-468, 1968.
  71. K. Johansen. Air breathing fishes. *Scientific American* 219(4), 102-112, 1968.
  72. K. Johansen, C. Lenfant, K. Schmidt-Nielsen & J.A. Petersen. Gas exchange and control of breathing in the electric eel, *Electrophorus electricus*. *Zeitschr. für Vergl. Physiol.* 61(2), 137-163, 1968.
  73. K. Johansen & R. Hol. A radiological study of the central circulation in the lungfish, *Protopterus aethiopicus*. *J. Morph.* 126(3), 333-348, 1968.
  74. K. Johansen. Adaptive responses to cold in arterial smooth muscle from heterothermic tissues of marine mammals. *Nature* 223, 866-867, 1969.
  75. K. Johansen. *Physiology of Fishes II*. Academic Press. Eds. Hoar &

- Randall. Chapter on Air Breathing Fishes. Vol. IV, 361-411, 1970.
76. C. Lenfant, K. Johansen & D. Hanson. Bimodal gas exchange and ventilation perfusion relationship in lower vertebrates. Fed. Proc. 29, 1124-1129, 1970.
  77. K. Johansen, C. Lenfant & D. Hanson. Phylogenetical development of the pulmonary circulation. Fed. Proc. 29, 1135-1140, 1970.
  78. C. Lenfant, K. Johansen, J.A. Petersen & K. Schmidt-Nielsen. Respiration in the fresh water turtle, Chelys fimbriata. Respiration Physiology 8, 261-275, 1970.
  79. K. Johansen, C. Lenfant & D. Hanson. Respiration in a primitive air breather, Amia calva. Resp. Physiol. 9, 162-174, 1970.
  80. C. Lenfant, K. Johansen & J. Torrance. Gas transport and oxygen storage capacity in some pinnipeds and the sea otter. Respiration Physiology 9, 277-286, 1970.
  81. G. Somero & K. Johansen. Temperature effects on enzymes from homeothermic and heterothermic tissues of the harbour seal (Phoca vitulina). Comp. Biochem. Physiol. 34, 131-136, 1970.
  82. D. Hanson & K. Johansen. Relationship between gill ventilation and perfusion in the elasmobranch, Squalus suckleyi. J. Fish. Res. Bd. Canada 27, 551-564, 1970.
  83. G. Satchell, D. Hanson & K. Johansen. Differential blood flow through the afferent branchial arteries of the skate, Raja rhina. J. Exp. Biol. 52, 721-726, 1970.
  84. K. Johansen. Introduction. Physiology Society Symposium: Cardio-respiratory adaptations in the transition from water breathing to air breathing. Fed. Proc. 29(3), 1118-1119, 1970.
  85. K. Johansen, C. Lenfant & A. Mecklenburg. Respiration in the crab, Cancer magister. Zeitschr. für Vergl. Physiol. 70, 1-19, 1970.
  86. K. Johansen & J.A. Petersen. Gas exchange and active ventilation in a starfish, Pteraster tessellatus. Zeitschr. für Vergl. Physiol. 71, 365-381, 1971.
  87. Textbook in Functional Morphology: "Patterns of Animal Structure". Chapters on Respiration and Circulation. MacMillan Co. N.Y. & London, 587 pp., 1971.
  88. K. Johansen. Circulation and gas exchange in lower vertebrates. Annual Review of Physiology 33, 569-612, 1971.
  89. D.R. Jones & K. Johansen. The blood vascular system of birds. In: Avian Biology. Eds. Farner & King, Academic Press, 157-285, 1972.
  90. K. Johansen. Heart and circulation in gill, skin and lung-

- breathing. *Respir. Physiol.* 14, 193-210, 1972.
91. C. Lenfant & K. Johansen. Gas exchange in gill, skin and lung breathing. *Respir. Physiol.* 14, 211-218, 1972.
  92. K. Johansen & C. Lenfant. A comparative approach to the adaptability of O<sub>2</sub>-Hb affinity. *Proc. A. Benzon Symp.* IV, 750-780. Munksgaard, Copenhagen, 1972.
  93. S.C. Wood & K. Johansen. Adaptation to hypoxia by increased HbO<sub>2</sub> affinity and decreased red cell ATP concentration. *Nature* 237, No 78, 278-279, 1972.
  94. S.C. Wood, K. Johansen & R.E. Weber. Haemoglobin of the coelacanth. *Nature* 239, No 5370, 283-285, 1972.
  95. E.A. Hemmingsen, E.L. Douglas, K. Johansen & R.W. Millard. Aortic blood flow and cardiac output in the hemoglobin-free fish *Chaenocephalus aceratus*. *Comp. Biochem. Physiol.* 43A, 1045-1051, 1972.
  96. H.J. Fyhn, J.A. Petersen & K. Johansen. Eco-physiological studies of an intertidal crustacean, *Pollicipes polymerus* (Cirripedia, Lepadomorpha). I. Tolerance to body temperature change, desiccation and osmotic stress. *J. Exp. Biol.* 57, 83-102, 1972.
  97. K. Johansen, C. Lenfant & C. Hanson. Gas exchange in the lamprey, *Entosphenus tridentatus*. *Comp. Biochem. Physiol.* 44A, 107-119, 1973.
  98. S.C. Wood & K. Johansen. Organic phosphate metabolism in nucleated red cells: Influence of hypoxia on eel HbO<sub>2</sub> affinity. *Neth. J. Sea Res.* 7, 328-338, 1973.
  99. R.E. Weber, J.F. Bol, K. Johansen & S.C. Wood. Physico-chemical properties of the hemoglobin of the coelacanth. *Arch. Biochem. Biophys.* 154, 96-105, 1973.
  100. S.C. Wood & K. Johansen. Blood oxygen transport and acid-base balance in eels during hypoxia. *Am. J. Physiol.* 225(4), 849-851, 1973.
  101. W.K. Milsom, K. Johansen & R.W. Millard. Blood respiratory properties in some antarctic birds. *The Condor* 75(4), 472-474, 1973.
  102. R.W. Millard, K. Johansen & W.K. Milsom. Radiotelemetry of cardiovascular responses to exercise and diving in penguins. *Comp. Biochem. Physiol.* 46A, 227-240, 1973.
  103. J.A. Petersen & K. Johansen. Gas exchange in the giant sea cradle *Cryptochiton stelleri* (Middendorff). *J. exp. mar. Biol. Ecol.* 12, 27-43, 1973.
  104. K. Johansen & R.W. Millard. Vascular responses to temperature in the foot of the giant fulmar, *Macronectes giganteus*. *J. comp.*

- Physiol. 85, 47-64, 1973.
105. H.J. Fyhn, J.A. Petersen & K. Johansen. Heart activity and high-pressure circulation in Cirripedia. Science 180, 513-515, 1973.
  106. K. Johansen & J.A. Petersen. Respiratory adaptations in Limulus polyphemus (L.) In: Physiological Ecology of Estuarine Organisms (ed. F.J. Vernberg). Univ. of South Carolina Press. The Belle W. Baruch Libr. in Marine Science No 3, pp. 129-145, 1974.
  107. R.W. Millard & K. Johansen. Ventricular outflow dynamics in the lizard, Varanus niloticus: Responses to hypoxia, hypercarbia and diving. J. Exp. Biol. 60, 871-880, 1974.
  108. S.C. Wood & K. Johansen. Respiratory adaptations to diving in the Nile monitor lizard, Varanus niloticus. J. comp. Physiol. 89, 145-158, 1974.
  109. R.E. Weber, E.A. Hemmingsen & K. Johansen. Functional and biochemical studies of penguin myoglobin. Comp. Biochem. Physiol. 49B, 197-214, 1974.
  110. O. Poupa, L. Sullivan & K. Johansen. Effect of H<sup>+</sup> on force development of the heart muscle under acute respiratory failure by cyanide. In: Recent Advances in Studies on Cardiac Structure and Metabolism, Vol. 5: Myocardial Cell Damage. University Park Press, Baltimore, 1974.
  111. T. Standaert & K. Johansen. Cutaneous gas exchange in snakes. J. comp. Physiol 89, 313-320, 1974.
  112. A.R. Hargens, R.W. Millard & K. Johansen. High capillary permeability in fishes. Comp. Biochem. Physiol. 48A, 675-680, 1974.
  113. J.P. Lomholt & K. Johansen. Control of breathing in an amphibious fish, Amphipnous cuchia. Acta Physiol. Scand. 91, 47A-48A, 1974.
  114. J.P. Lomholt & K. Johansen. Control of breathing in Amphipnous cuchia, an amphibious fish. Respir. Physiol. 21, 325-340, 1974.
  115. J.A. Petersen, H.J. Fyhn & K. Johansen. Eco-physiological studies of an intertidal crustacean, Pollicipes polymerus (Cirripedia, Lepadomorpha): Aquatic and aerial respiration. J. Exp. Biol. 61, 309-320, 1974.
  116. K. Johansen & R.W. Millard. Cold-induced neurogenic vasodilatation in skin of the giant fulmar, Macronectes giganteus. Am. J. Physiol. 227(6), 1232-1235, 1974.
  117. W.K. Milsom & K. Johansen. The effect of buoyancy induced lung volume changes on respiratory frequency in a chelonian (Caretta caretta). J. comp. Physiol. 98, 157-160, 1975.
  118. O. Poupa & K. Johansen. Adaptive tolerance of fish myocardium to



- hypercapnic acidosis. Am. J. Physiol. 228(3), 684-688, 1975.
119. C.P. Mangum, M.A. Freadman & K. Johansen. The quantitative role of hemocyanin in aerobic respiration of Limulus polyphemus. J. Exp. Zool. 191(2), 279-285, 1975.
120. C.P. Mangum, G. Lykkeboe & K. Johansen. Oxygen uptake and the role of hemoglobin in the East African swampworm Alma emini. Comp. Biochem. Physiol. 52A, 477-482, 1975.
121. K. Johansen, G.M.O. Maloiy & G. Lykkeboe. A fish in extreme alkalinity. Respir. Physiol. 24, 159-162, 1975.
122. S.C. Wood, R.E. Weber, G.M.O. Maloiy & K. Johansen. Oxygen uptake and blood respiratory properties of the caecilian Boulengerula taitanus. Respir. Physiol. 24, 355-363, 1975.
123. G. Lykkeboe & K. Johansen. Comparative aspects of buffering capacity in muscle. Respir. Physiol. 25, 353-361, 1975.
124. G. Lykkeboe, K. Johansen & G.M.O. Maloiy. Functional properties of hemoglobins in the teleost Tilapia grahami. J. comp. Physiol. 104, 1-11, 1975.
125. S.C. Wood, K. Johansen & R.E. Weber. Effects of ambient PO<sub>2</sub> on hemoglobin-oxygen affinity and red cell ATP concentrations in a benthic fish, Pleuronectes platessa. Respir. Physiol. 25, 259-267, 1975.
126. C.P. Mangum & K. Johansen. The colloid osmotic pressures of invertebrate body fluids. J. exp. Biol. 63, 661-671, 1975.
127. J.P. Lomholt, K. Johansen & G.M.O. Maloiy. Is the aestivating lungfish the first vertebrate with suctional breathing? Nature 257, No 5529, 787-788, 1975.
128. A.R. Hargens & K. Johansen. Per (Pete) Scholander. Pioneering to a broader sense of biology. The Physiologist, November 1975.
129. R.E. Weber, G. Lykkeboe & K. Johansen. Biochemical aspects of the adaptation of hemoglobin-oxygen affinity of eels to hypoxia. Life Sciences 17, 1345-1350, 1975.
130. K. Johansen & R.E. Weber. On the adaptability of haemoglobin function to environmental conditions. In: Perspectives in Experimental Biology, Vol. 1, Zoology (ed. P. Spencer Davies). Pergamon Press, Oxford and New York, pp. 219-234, 1976.
131. R.E. Weber, G. Lykkeboe & K. Johansen. Physiological properties of eel haemoglobin: Hypoxic acclimation, phosphate effects and multiplicity. J. exp. Biol. 64(1), 75-88, 1976.
132. J.P. Lomholt & K. Johansen. Gas exchange in the amphibious fish, Amphipnous cuchia. J. comp. Physiol. 107, 141-157, 1976.

133. K. Johansen, G. Lykkeboe, R.E. Weber & G.M.O. Maloiy. Respiratory properties of blood in awake and estivating lungfish, Protopterus amphibius. *Respir. Physiol.* 27, 335-345, 1976.
134. M. Glass & K. Johansen. Control of breathing in Acrochordus javanicus, an aquatic snake. *Physiol. Zool.* 49(3), 328-340, 1976.
135. K. Johansen, J.P. Lomholt & G.M.O. Maloiy. Importance of air and water breathing in relation to size of the African lungfish Protopterus amphibius, *Peters. J. exp. Biol.* 65, 395-399, 1976.
136. K. Johansen, G. Lykkeboe, R.E. Weber & G.M.O. Maloiy. Blood respiratory properties in the naked mole rat Heterocephalus glaber, a mammal of low body temperature. *Respir. Physiol.* 28, 303-314, 1976.
137. R.E. Weber, K. Johansen, G. Lykkeboe & G.M.O. Maloiy. Oxygen-binding properties of hemoglobins from estivating and active African lungfish. *J. exp. Zool.* 199(1), 85-96, 1977.
138. F.B. Eddy, J.P. Lomholt, R.E. Weber & K. Johansen. Blood respiratory properties of rainbow trout (Salmo gairdneri) kept in water of high CO<sub>2</sub> tension. *J. exp. Biol.* 67, 37-47, 1977.
139. H. Gesser, K. Johansen & G.M.O. Maloiy. Tissue metabolism and enzyme activities in the rodent Heterocephalus glaber, a poor temperature regulator. *Comp. Biochem. Physiol.* 57B, 293-296, 1977.
140. K. Johansen, W. Burggren & M. Glass. Pulmonary stretch receptors regulate heart rate and pulmonary blood flow in the turtle, Pseudemys scripta. *Comp. Biochem. Physiol.* 58A, 185-191, 1977.
141. G. Lykkeboe, H. Schougaard & K. Johansen. Training and exercise change respiratory properties of blood in race horses. *Respir. Physiol.* 29, 315-325, 1977.
142. S.C. Wood, M.L. Glass & K. Johansen. Effects of temperature on respiration and acid-base balance in a monitor lizard. *J. comp. Physiol.* 116, 287-296.
143. C.P. Mangum, M.S. Haswell & K. Johansen. Low salt and high pH in the blood of Amazon fishes. *J. exp. Zool.* 200(1), 163-168, 1977.
144. O.B. Reite, R.W. Millard & K. Johansen. Effects of low tissue temperature on peripheral vascular control mechanisms. *Acta Physiol. Scand.* 101(2), 247-253, 1977.
145. G.B. Bourne, J.R. Redmond & K. Johansen. Nautilus pompilius: Branchial circulation enhanced by an auxiliary pumping mechanism. *Experientia* 33, 1453, 1977.
146. S.C. Wood, K. Johansen & R.N. Gatz. Pulmonary blood flow, venti-

- lation/perfusion ratio, and oxygen transport in a varanid lizard. *Am. J. Physiol.* 233(3), R89-R93, 1977.
147. W.W. Burggren, M.L. Glass & K. Johansen. Pulmonary ventilation: perfusion relationships in terrestrial and aquatic chelonian reptiles. *Can. J. Zool.* 55(12), 2024-2034, 1977.
148. S.C. Wood, G. Lykkeboe, K. Johansen, R.E. Weber & G.M.O. Maloiy. Temperature acclimation in the pancake tortoise, Malacochersus torneiri: Metabolic rate, blood pH, oxygen affinity and red cell organic phosphates. *Comp. Biochem. Physiol.* 59A, 155-160, 1978.
149. G.M.O. Maloiy, G. Lykkeboe, K. Johansen & O.S. Bamford. Osmoregulation in Tilapia grahami: a fish in extreme alkalinity. In: *Comparative Physiology - Water, Ions and Fluid Mechanics* (eds. Schmidt-Nielsen, Bolis and Maddrell). Cambridge University Press, pp. 229-238, 1978.
150. K. Johansen, C.P. Mangum & G. Lykkeboe. Respiratory properties of the blood of Amazon fishes. *Can. J. Zool.* 56(4), 898-906, 1978.
151. K. Johansen, C.P. Mangum & R.E. Weber. Reduced blood O<sub>2</sub> affinity associated with air breathing in osteoglossid fishes. *Can. J. Zool.* 56(4), 891-897, 1978.
152. C.P. Mangum, M.S. Haswell, K. Johansen & D.W. Towle. Inorganic ions and pH in the body fluids of Amazon animals. *Can. J. Zool.* 56(4), 907-916, 1978.
153. M.L. Glass, S.C. Wood & K. Johansen. The application of pneumotachography on small unrestrained animals. *Comp. Biochem. Physiol.* 59A, 425-427, 1978.
154. M.L. Glass, W.W. Burggren & K. Johansen. Ventilation in an aquatic and a terrestrial chelonian reptile. *J. exp. Biol.* 72, 165-179, 1978.
155. K. Johansen, J.R. Redmond & G.B. Bourne. Respiratory exchange and transport of oxygen in Nautilus pompilius. *J. exp. Zool.* 205(1), 27-35, 1978.
156. J.R. Redmond, G.B. Bourne & K. Johansen. Oxygen uptake by Nautilus pompilius. *J. exp. Zool.* 205(1), 45-49, 1978.
157. G.B. Bourne, J.R. Redmond & K. Johansen. Some aspects of hemodynamics in Nautilus pompilius. *J. exp. Zool.* 205(1), 63-70, 1978.
158. K. Johansen. Ecological aspects of hemoglobin's oxygen affinity. *Proceedings of the International Union of Physiological Sciences*, Vol. XII, p. 402, 1978.
159. O. Poupa, H. Gesser & K. Johansen. Myocardial inotropy of CO<sub>2</sub> in water- and air-breathing vertebrates. *Am. J. Physiol.* 234(3),

R155-R157, 1978.

160. K. Johansen & O.B. Reite. Microcirculation in Amphibia. In: Microcirculation (eds. G. Kaley and B.M. Altura). University Park Press, Vol. II, pp. 649-673, 1978.
161. S.C. Wood, K. Johansen, M.L. Glass & G.M.O. Maloiy. Aerobic metabolism of the lizard, Varanus exanthematicus: Effects of activity, temperature, and size. J. comp. Physiol. 127(4B), 331-336, 1978.
162. W.W. Burggren, M.L. Glass & K. Johansen. Intrapulmonary variation of gas partial pressures and ventilation inequalities in chelonian reptiles. J. comp. Physiol. 126, 203-209, 1978.
163. G. Lykkeboe & K. Johansen. An O<sub>2</sub>-Hb 'paradox' in frog blood? (n-values exceeding 4.0). Respir. Physiol. 35, 119-127, 1978.
164. O. Brix, G. Lykkeboe & K. Johansen. Reversed Bohr and Root shifts in hemocyanin of the marine prosobranch, Buccinum undatum: Adaptations to a periodically hypoxic habitat. J. comp. Physiol. 129, 97-103, 1979.
165. J.P. Lomholt & K. Johansen. Hypoxia acclimation in carp - How it affects O<sub>2</sub> uptake, ventilation, and O<sub>2</sub> extraction from water. Physiol. Zool. 52(1), 38-49, 1979.
166. K. Johansen. Cardiovascular Support of Metabolic Functions in Vertebrates. In: Evolution of Respiratory Processes: A comparative approach, (eds. S.C. Wood & C. Lenfant) pp. 107-192. Marcel Dekker Inc., New York, 1979.
167. M.L. Glass, S.C. Wood, R.W. Hoyt & K. Johansen. Chemical control of breathing in the lizard, Varanus exanthematicus. Comp. Biochem. Physiol. 62A, 999-1003, 1979.
168. K. Johansen. Cardiovascular function in birds (Examples of service to homeostasis). Berlin Symposium, 1978. Proceedings of the XVIIth Int. Congr. Ornith, 1979.
169. C. Bech, K. Johansen & G.M.O. Maloiy. Ventilation and expired gas composition in the flamingo, Phoenicopterus ruber, during normal respiration and panting. Physiol. Zool. 52(3), 313-328, 1979.
170. J.M.Z. Kamau, K. Johansen & G.M.O. Maloiy. Thermoregulation and standard metabolism of the slender mongoose (Herpestes sanguineus). Physiol. Zool. 52(4), 594-602, 1979.
171. M.L. Glass & K. Johansen. Periodic breathing in the crocodile, Crocodylus niloticus: Consequences for the gas exchange ratio and control of breathing. J. exp. Zool. 208(3), 319-325, 1979.
172. K. Johansen & G. Lykkeboe. Thermal acclimation of aerobic metabo-

- lism and O<sub>2</sub>-Hb binding in the snake, Vipera berus. J. comp. Physiol. 130, 293-300, 1979.
173. J.E.P.W. Bicudo & K. Johansen. Respiratory gas exchange in the airbreathing fish, Synbranchus marmoratus. Env. Biol. Fish. 4(1), 55-64, 1979.
174. A. Kerstens, J.P. Lomholt & K. Johansen. The ventilation, extraction and uptake of oxygen in undisturbed flounders, Platichthys flesus. (Responses to hypoxia acclimation). J. exp. Biol. 83, 169-179, 1979.
175. M. Berger, K. Johansen, A. Ruschi & P.J. de Almeida. Heart rates of flying hummingbirds. XXX Aniv. Boletim do Museu de Biologia Prof. M. Leitao, Sep. 26-6-79, 75-80, 1979.
176. K. Johansen, M. Berger, A. Ruschi, P.J. de Almeida & J.E.P.W. Bicudo. Hematocrits and blood O<sub>2</sub> capacities in hummingbirds. XXX Aniv. Boletim do Museu de Biologia Prof. M. Leitao, Sep. 26-6-79, 70-74, 1979.
177. K.B. Storey, J.M. Storey, K. Johansen & P.W. Hochachka. Octopine metabolism in Sepia officinalis: Effect of hypoxia and metabolite loads on the blood levels of octopine and related compounds. Can. J. Zool. 57, 2331-2336, 1979.
178. K. Johansen. Circulation of blood in vertebrate oxygen transport. In: Animals and Environmental Fitness, Abstracts of the 1st Eur. Conf. of Comp. Physiol. & Biochem. (ed. R. Gilles) pp. 133-155. Pergamon Press, Oxford & New York, 1980.
179. R.E. Weber & K. Johansen. Oxygenation-linked binding of carbon dioxide and allosteric phosphate cofactors by lungfish hemoglobin. In: Animals and Environmental Fitness. Abstracts of the 1st Eur. Conf. of Comp. Physiol. & Biochem. (ed. R. Gilles), pp. 49-50. Pergamon Press, Oxford & New York, 1980.
180. K. Johansen, G. Lykkeboe, S. Kornerup & G.M.O. Maloiy. Temperature insensitive O<sub>2</sub> binding in blood of the tree frog Chiromantis petersi. J. comp. Physiol. 136, 71-76, 1980.
181. C. Bech & K. Johansen. Ventilation and gas exchange in the mute swan, Cygnus olor. Respir. Physiol. 39, 285-295, 1980.
182. C. Bech, W. Rautenberg, B. May & K. Johansen. Effect of spinal cord temperature on carotid blood flow in the Pekin duck. Pflügers Arch. 385, 269-271, 1980.
183. K. Johansen & W.W. Burggren. Cardiovascular Function in the Lower Vertebrates. In: Heart and Heart-Like Organs (ed G.H. Bourne), Vol. 1, pp. 61-117. Academic Press, 1980.

184. G. Lykkeboe, O. Brix & K. Johansen. Oxygen-linked CO<sub>2</sub> binding independent of pH in cephalopod blood. *Nature* 287, 330-331, 1980.
185. C. Bech & K. Johansen. Ventilatory and circulatory responses to hyperthermia in the mute swan (Cygnus olor). *J. exp. Biol.* 88, 195-204, 1980.
186. C. Bech & K. Johansen. Blood flow changes in the duck during thermal panting. *Acta Physiol. Scand.* 110, 351-355, 1980.
187. K. Johansen, A.S. Abe & R.E. Weber. Respiratory properties of whole blood and hemoglobin from the burrowing reptile, Amphisbaena alba. *J. exp. Zool.* 214, 71-77, 1980.
188. M. Berger & K. Johansen. Die Stadien der Kältestarre bei Kolibris - Anpassung von Atmung und Kreislauf. *Verh. Dtsch. Zool. Ges.*, 307. 1980.
189. R.E. Weber, K. Johansen & A.S. Abe. Myoglobin from the burrowing reptile, Amphisbaena alba. Concentrations and functional characteristics. *Comp. Biochem. Physiol.* 68B, 159-165, 1981.
190. S.C. Wood, K. Johansen, M.L. Glass & R.W. Hoyt. Acid-base regulation during heating and cooling in the lizard, Varanus exanthematicus. *J. appl. Physiol.* 50, 779-783, 1981.
191. J.F. Steffensen, J.P. Lomholt & K. Johansen. The relative importance of skin oxygen uptake in the naturally buried plaice, Pleuronectes platessa, exposed to graded hypoxia. *Respir. Physiol.* 44, 269-275, 1981.
192. M.L. Glass, K. Johansen & A.S. Abe. Pulmonary diffusing capacity in reptiles (Relations to temperature and O<sub>2</sub>-uptake). *J. comp. Physiol.* 142, 509-514, 1981.
193. O. Brix, G. Lykkeboe & K. Johansen. The significance of the linkage between the Bohr and Haldane effects in cephalopod bloods. *Respir. Physiol.* 44, 177-186, 1981.
194. K. Johansen & K. Pettersson. Gill O<sub>2</sub> consumption in a teleost fish, Gadus morhua. *Respir. Physiol.* 44, 277-284, 1981.
195. O. Brix, G. Lykkeboe & K. Johansen. The influence of habitat factors on respiratory properties of the hemolymph from the marine prosobranch, Buccinum undatum. In: *Invertebrate Oxygen-Binding Proteins. Structure, Active Site, and Function.* (ed. J. Lamy). Marcel Dekker Publ. Co., 1981.
196. M.L. Glass, W.W. Burggren & K. Johansen. Pulmonary diffusing capacity of the bullfrog (Rana catesbeiana). *Acta Physiol. Scand.* 113, 485-490, 1981.
197. L.E. Burnett & K. Johansen. The role of branchial ventilation in

- hemolymph acid-base changes in the shore crab Carcinus maenas during hypoxia. J. comp. Physiol. 141, 489-494, 1981.
198. K. Johansen, O. Brix, S. Kornerup & G. Lykkeboe. Factors affecting O<sub>2</sub>-uptake in the cuttlefish, Sepia officinalis. J. mar. biol. Ass. U.K. 62, 187-191, 1982.
199. W.W. Burggren & K. Johansen. Ventricular hemodynamics in the monitor lizard Varanus exanthematicus: Pulmonary and systemic pressure separation. J. exp. Biol. 96, 343-354, 1982.
200. K. Johansen. Blood, circulation, and the rise of air breathing: passes and bypasses. In: A Companion to Animal Physiology. (eds. C.R. Taylor, K. Johansen & L. Bolis). Cambridge University Press, 1982.
201. K. Johansen, O. Brix & G. Lykkeboe. Blood gas transport in the cephalopod, Sepia officinalis. J. exp. Biol. 99, 331-338, 1982.
202. C. Bech, R. Brent, P.F. Pedersen, J.G. Rasmussen & K. Johansen. Temperature regulation in chicks of the Manx shearwater Puffinus puffinus. Ornis Scand. 13, 206-210, 1982.
203. J.F. Steffensen, J.P. Lomholt & K. Johansen. Gill ventilation and O<sub>2</sub> extraction during graded hypoxia in two ecologically distinct species of flatfish, the flounder (Platichthys flesus) and the plaice (Pleuronectes platessa). Env. Biol. Fish. 7(2), 157-163, 1982.
204. B. Christiansen, J.P. Lomholt & K. Johansen. Oxygen uptake of carp, Cyprinus carpio, swimming in normoxic and hypoxic water. Env. Biol. Fish. 7(3), 291-296, 1982.
205. C. Bech, W. Rautenberg, B. May & K. Johansen. Regional blood flow changes in response to thermal stimulation of the brain and spinal cord in the Pekin duck. J. Comp. Physiol. 147, 71-77, 1982.
206. M.L. Glass & K. Johansen. Pulmonary oxygen diffusing capacity of the lizard, Tupinambis teguixin. J. exp. Zool. 219, 385-388, 1982.
207. K. Pettersson & K. Johansen. Hypoxic vasoconstriction and the effects of adrenaline on gas exchange efficiency in fish gills. J. exp. Biol. 97, 263-272, 1982.
208. K. Johansen. Respiration. In: McGraw-Hill Encyclopedia of Science and Technology, 1982.
209. K. Johansen. Respiratory gas exchange of vertebrate gills. In: Gills (eds. D.F. Houlihan, J.C. Rankin & T.J. Stuttleworth). Cambridge University Press, 1982.

210. G. Lykkeboe & K. Johansen. A cephalopod approach to rethinking about the importance of the Bohr and Haldane effects. *Pacific Science* 36(3), 305-313, 1982.
211. C.P. Mangum & K. Johansen. The influence of symbiotic dinoflagellates on respiratory processes in the giant clam Tridacna squamosa. *Pacific Science* 36(3), 395-401, 1982.
212. J.P. Lomholt & K. Johansen. The application of polarographic oxygen sensors for continuous assessment of gas exchange in aquatic animals. In: *Polarographic Oxygen Sensors* (eds. E. Gnai-ger & H. Forstner), Springer-Verlag, 1983.
213. S. Nomoto, C. Bech, W. Rautenberg & K. Johansen. Temperature regulation and cardiovascular responses during bipedal exercise in birds. *J. therm. Biol.* 8(1/2), 175-177, 1983.
214. K. Johansen & C. Bech. Heat conservation during cold exposure in birds (vasomotor and respiratory implications). *Polar Research* 1, 259-268, 1983.
215. R. Brent, P.F. Pedersen, C. Bech & K. Johansen. Lung ventilation and temperature regulation in the European coot Fulica atra. *Physiol. Zool.* 57(1), 19-25, 1984.
216. K. Johansen & C. Bech. Breathing and Thermoregulation in Birds. In: *Thermal Physiology* (ed. J.R.S. Hales), Raven Press, New York, 1984.
217. C. Bech, K. Johansen, R. Brent & S. Nicol. Ventilatory and circulatory changes during cold exposure in the Pekin duck Anas platyrhynchos. *Respir. Physiol.* 57, 103-112, 1984.
218. J.F. Steffensen, K. Johansen & P.G. Bushnell. An automated swimming respirometer. *Comp. Biochem. Physiol.* 79A(3), 437-440, 1984.
219. K. Johansen & W.W. Burggren. Venous return and cardiac filling in varanid lizards. *J. exp. Biol.* 113, 389-399, 1984.
220. P.G. Bushnell, J.F. Steffensen & K. Johansen. Oxygen consumption and swimming performance in hypoxia-acclimated rainbow trout Salmo gairdneri. *J. exp. Biol.* 113, 225-235, 1984.
221. J.F. Steffensen, K. Johansen, C.D. Sindberg, J.H. Sørensen & J.L. Møller. Ventilation and oxygen consumption in the hagfish, Myxine glutinosa L. *J. Exp. Mar. Biol. Ecol.* 84, 173-178, 1984.
222. F.T. Rantin & K. Johansen. Responses of the teleost Hoplias malabaricus to hypoxia. *Env. Biol. Fish.* 11(3), 221-228, 1984.
223. C. Bech, K. Johansen & S. Nicol. Gas exchange during high frequency ventilation in pigeons. *Proc. Europ. Soc. for Comp. Phy-*



- siol. Biochem., A80, 1984.
224. W.R. Driedzic, H. Gesser & K. Johansen. Effects of hypoxic adaptation on myocardial performance and metabolism of Zoarces viviparus. Can. J. Zool. 63, 821-823, 1985.
  225. K. Johansen. A phylogenetic overview of cardiovascular shunts. In: Cardiovascular shunts: Phylogenetic, ontogenetic and clinical aspects (eds. K. Johansen & W.W. Burggren). Alfred Benzon Symp. 21, Munksgaard, Copenhagen, 1985.
  226. U. Midtgård, P. Sejrsen & K. Johansen. Blood flow in the brood patch of Bantam hens: evidence of cold vasodilation. J. Comp. Physiol. 155, 703-709, 1985.
  227. H. Tazawa, J.P. Lomholt & K. Johansen. Direct measurement of allantoic blood flow in the chicken, Gallus domesticus. Responses to alteration in ambient temperature and PO<sub>2</sub>. Comp. Biochem. Physiol. 81A, 641-642, 1985.
  228. G.C. Grigg, W.D. Farwell, J.L. Kinney, P. Harlow, L.E. Taplin, Kjell Johansen & Kjetil Johansen. Diving and amphibious behaviour in a free-living Crocodylus porosus. Aust. Zool. 21(7), 599-605, 1985.
  229. W. Burggren, K. Johansen & B. McMahon. Respiration in phylogenetically ancient fishes. In: Evolutionary Biology of Primitive Fishes (eds. R.E. Foreman, A. Gorbman, J.M. Dodd & R. Olsson). NATO ASI Series, Series A: Life Sciences Vol. 103, Plenum Press, New York and London, pp. 217-252, 1985.
  230. R. Brent, P.F. Pedersen, C. Bech & K. Johansen. Thermal balance in the European Coot Fulica atra exposed to temperatures from -28 °C to 40 °C. Ornis Scand. 16, 145-150, 1985.
  231. G.C. Grigg, K. Johansen, P. Harlow, L.A. Beard & L.E. Taplin. Facultative aestivation in a tropical freshwater turtle Chelodina rugosa. Comp. Biochem. Physiol. 83A(2), 321-323, 1986.
  232. M.L. Glass, A. Ishimatsu & K. Johansen. Responses of aerial ventilation to hypoxia and hypercapnia in Channa argus, an air-breathing fish. J. Comp. Physiol. 156, 425-430, 1986.
  233. K. Johansen & H. Gesser. Fish cardiology: structural, haemodynamic, electromechanical and metabolic aspects. In: Fish Physiology: Recent Advances (Eds. S. Nilsson & S. Holmgren). Croom Helm, London, Sydney, Dover, New Hampshire, pp. 71-85, 1986.
  234. K. Johansen & C. Bech. Breathing and thermoregulation in birds. Fauna Norvegica Ser. C. Cinclus 7, 135-136, 1984.
  235. A. Ishimatsu, K. Johansen & S. Nilsson. Autonomic nervous control

- of the circulatory system in the air-breathing fish Channa argus. *Comp. Biochem. Physiol.* 84C, 55-60, 1986.
236. W. Burggren & K. Johansen. Circulation and respiration in lungfishes. In: *The Biology and Evolution of Lungfishes* (eds. W. Bemish & W. Burggren). Alan R. Liss, Chicago, 1986.
237. A.S. Abe & K. Johansen. Gas exchange and ventilatory responses to hypoxia and hypercapnia in Amphisbaena alba (Reptilia: Amphisbaenia). *J. exp. Biol.* 127, 159-172, 1987.
238. K. Johansen, M. Berger, J.E.P.W. Bicudo, A. Ruschi & P.J. de Almeida. Respiratory properties of blood and myoglobin in hummingbirds. *Physiol. Zool.* 60(2), 269-278, 1987.
239. S. Thomas, J. Poupin, G. Lykkeboe & K. Johansen. Effects of graded exercise on blood gas tensions and acid-base characteristics of rainbow trout. *Respir. Physiol.* 68, 85-97, 1987.
240. K. Johansen, A.S. Abe & J.H. Andresen. Intracardiac shunting revealed by angiocardiology in the lizard Tupinambis teguixin. *J. exp. Biol.* 130, 1-12, 1987.
241. M. Kruhøffer, M.L. Glass, A.S. Abe & K. Johansen. Control of breathing in an amphibian, Bufo paracnemis: Effects of temperature and hypoxia. *Respir. Physiol.* 69, 267-275, 1987.
242. J.H. Andresen, A. Ishimatsu, K. Johansen & M.L. Glass. An angiocardiological analysis of the central circulation in the air breathing teleost Channa argus. *Acta Zool.* 68(3), 165-171, 1987.
243. A.R. Hargens, R.W. Millard, K. Pettersson & K. Johansen. Gravitational haemodynamics and oedema prevention in the giraffe. *Nature* 329(6134), 59-60, 1987.
244. K. Johansen. The August Krogh Lecture: The World as a Laboratory. *Physiological Insights from Nature's Experiments*. In: Advances in Physiological Research. (Eds. H. McLennan, J.R. Ledsome, C.H.S. McIntosh and D.R. Jones). Plenum Publishing Corporation. 1987.
245. G.C. Grigg & K. Johansen. Cardiovascular dynamics in Crocodylus porosus breathing air and during voluntary aerobic dives. *J. Comp. Physiol.* 157(3), 381-392, 1987.
246. R.S. Seymour & K. Johansen. Blood flow uphill and downhill: does a siphon facilitate circulation above the heart? *Comp. Biochem. Physiol.* 88A(2), 167-170, 1987.
247. H. Tazawa & K. Johansen. Comparative model analysis of central shunts in vertebrate cardiovascular systems. *Comp. Biochem. Physiol.* 86A(4), 595-607, 1987.

248. E. Hohtola & K. Johansen. Respiratory modulation of shivering intensity in the pigeon. *Acta Physiol. Scand.* 131, 215-220, 1987.