

Roger Seymour presents a short history of his involvement in palaeophysiology that stems from ecophysiological studies of living animals and even plants. On one hand, living mammals and birds are called endotherms, because they have high metabolic rates and body temperature regulation. On the other hand, living reptiles, amphibians and fish have low metabolic rates and are unable to regulate body temperature physiologically. This dichotomy has led to heated argument about the status of dinosaurs and particularly when endothermy arose among archosaurs. The problem is that the two descendant groups are either endotherms (birds) or ectotherms (crocodilians). Seymour's studies on endothermic insects, endothermic flowers and one ectothermic mammal showed that the metabolic status can be flexible. His work on metabolism and cardiovascular physiology of crocodiles and snakes led to the realization that the ancestors of crocodiles were endotherms. Further, living endotherms have high blood pressure and larger arteries to carry oxygen to respiring tissues. Minimum blood pressure can be inferred from the vertical distance between the heart and the head in reconstructed skeletons, and blood flow rate can be inferred from the size of vascular foramina in fossil bones. Both pressure and flow rates are consistent with endothermy among early archosaurs.