



**Cover:** A pair of downstream-migrating, juvenile sea lampreys (*Petromyzon marinus* L.) that have just completed their transformation from substrate-dwelling, filter feeders into free-swimming, parasitic feeders. Lampreys are the most primitive osmoregulating vertebrates and this species has an anadromous life history. During metamorphosis branchial seawater-type mitochondria-rich cells first appear, gill Na<sup>+</sup>/K<sup>+</sup>-ATPase activity increases and hypo-osmoregulatory ability improves markedly, all indicating a preparatory adaptation for life at sea (see article by P. Reis-Santos, S. D. McCormick and J. M. Wilson, pp. 978–988), and abundant Na<sup>+</sup>/K<sup>+</sup>-ATPase (red staining) is associated with these cells. Photos by Jonathan Wilson; thanks to Dr Carlos Antunes for supplying the lampreys.

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