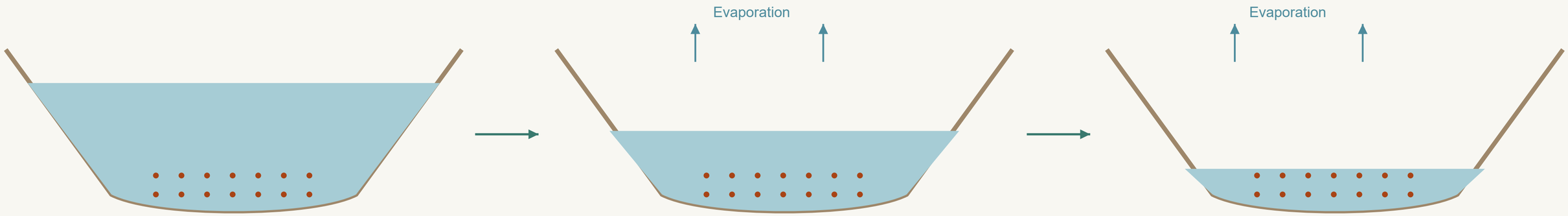
Two independent pressures, one cooling advantage

The paper proposes sodium excretion and iron conservation as distinct origins; their convergence makes evaporative cooling highly effective.

A CLOSED-BASIN WATER CHEMISTRY



1 Diluted water

A basin may initially provide potable water when inflow and dilution are sufficient.

2 Evaporative concentration

Water is lost to the atmosphere while dissolved salts are retained.

3 Greater sodium exposure

Continued drawdown can increase salinity and the sodium burden of drinking water.

Closed drainage limits surface export of salts. Weathering, volcanic materials and groundwater can add dissolved minerals. The sequence is schematic: humid phases can dilute water again, and mineral composition and salinity vary among basins.

SODIUM-LOADING PRESSURE

Progressively mineralized drinking water → chronic sodium challenge → **proposed expansion of eccrine secretion for sodium elimination.**

INDEPENDENT IRON-ALLOCATION PRESSURE

Terrestrial locomotion and recurring iron costs → **proposed reduction of dense body hair** to reduce follicular investment.

CONVERGENCE: HIGHLY EFFECTIVE COOLING

Sweat evaporating from exposed skin removes heat. Reduced body hair and abundant eccrine secretion together support sustained activity in heat.

PROPOSED LATER REFINEMENT: COOLING WITH ECONOMICAL SALT RETENTION

Less reliable sodium supplies favour refinement of existing sweat-duct recovery and renal retention. Recovery is incomplete: at high sweat flow, secretion can rise faster than reabsorption. Sustained net losses still need replacement.

Source: corrected Version 2, water chemistry, sweating and body-hair sections; Eugster & Jones (1979), Maslin et al. (2014), as cited there. Evaporative concentration and evaporative heat loss provide physical context. Selection for sodium-driven sweating and iron-driven hair reduction is the author's hypothesis. Later conservation is a proposed selective refinement, not a late origin of kidney salt regulation. Flow and acclimation: Buono et al. (2008); Kirby & Convertino (1986). Dots are schematic.

An exposition of corrected Version 2 • Christopher Gomes