# 植物生态学报

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# 植 物 生 态 学 报

## Zhiwu Shengtai Xuebao

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**封面说明:** 雅鲁藏布江高山峡谷景观(谢红摄)。雅鲁藏布江发源于西藏西南部喜马拉雅山北麓的杰马央宗冰川, 是世界上海拔最高的大河之一, 也是横贯青藏高原南部的重要跨境河流。复杂的地形地貌、显著的海拔梯度和独特的水文环境孕育了丰富而独特的水生生物多样性。浮游硅藻对水温、营养盐和溶解氧等环境因子的变化响应敏感, 是指示河流生态环境变化的重要生物类群。吴湘君等(本期1646-1660页)以雅鲁藏布江浮游硅藻为研究对象, 分析其物种多样性与群落组成的空间分布格局, 并探讨环境因子对浮游硅藻多样性空间变化的驱动作用, 揭示了雅鲁藏布江浮游硅藻群落显著的空间异质性及其主要环境驱动因素, 为深入理解青藏高原河流浮游植物多样性的维持机制, 以及流域水生态系统保护和生态健康评价提供了科学依据。

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**Cover illustration:** Alpine canyon landscape of the Yarlung Zangbo River (photograph by XIE Hong). Originating from the Jiema Yangzong Glacier on the northern slope of the Himalayas in southwestern Xizang, the Yarlung Zangbo River is one of the world's highest-elevation major rivers and an important transboundary river flowing across the southern Qingzang Plateau. Its complex topography, pronounced elevational gradients, and distinctive hydrological conditions support rich and unique aquatic biodiversity. Planktonic diatoms are sensitive to changes in environmental conditions such as water temperature, nutrient concentrations, and dissolved oxygen, making them important bioindicators of riverine ecological conditions. Wu et al. (Pages 1646-1660) investigated planktonic diatoms in the Yarlung Zangbo River to characterize spatial patterns in species diversity and community composition and to identify the environmental factors driving spatial variation in diatom diversity. Their study reveals pronounced spatial heterogeneity in planktonic diatom communities and identifies its major environmental drivers, providing insights into the mechanisms maintaining phytoplankton diversity in rivers of the Qingzang Plateau and a scientific basis for aquatic ecosystem conservation and ecological health assessment in the watershed.