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附录1 植物入侵生态学主要相关假说释义及参考文献

<u>新</u> 编号	假说 假说	描述 正	参考文献
No.	Hypothesis		Reference
1	达尔又归化假说 Darwin's naturalization	与本地种关缘关系远的外来种更容易归化成功 Alien plant species distantly related to natives are more likely to naturalize.	Darwin, 1859
2	hypothesis "多样性-入侵性"假说 Diversity-invasibility hypothesis	本地群落生物多样性越高,外来种成功入侵的概率越低 The higher diversity of native community, the lower chance of invasion success by alien plant species.	Elton, 1958
3	预适应假说 Pre-adaptation hypothesis	近缘物种偏好相似的生境,其原产地与入侵地的生态环境越相似的近缘物种越容易入侵成功 Alien species closely related to native species would be more likely to successfully establish because they might chara educations to the local environment	Elton, 1958
4	空生态位假说 Empty niche hypothesis	外来种占据本地群落的空余生态位实现入侵 The invasion success of alien species increases with the availability of empty niches in native community.	Elton, 1958
5	理想杂草特征假说 Ideal weeds characteristics hypothesis	外来入侵植物往往具有杂草特征, 能更好地适应环境, 实现竞争优势 Invasive alien plant with ideal weed characteristics can better adapt to environment conditions and achieve competitive advantage.	Baker & Stebbins, 1965
6	增强竞争力进化假说 Evolution of increased competitive ability hypothesis	外来种入侵新生境之后其资源进行分配会进化至向生长繁殖方面转移而实现竞争优势 Alien species will allocate more resources in growth and/or reproduction (this re- allocation is due to rapid post-invasion evolution), which makes them more competitive.	Blossey & Notzold, 1995
7	干扰假说 Disturbance hypothesis	受干扰的群落易形成空余生态位,促进外来种成功建殖 Disturbance events increase vacant niches and thus promote establishment of alien species.	Lozon & MacIsaac, 1997
8	入侵崩溃假说 Invasional meltdown hypothesis	同一生境中已有外来种的入侵能够促进其他外来种的入侵 The presence of alien species in a habitat facilitates invasion by additional alien species.	Simberloff & Von Holle, 1999
9	资源波动假说 Fluctuating resources hypothesis	资源可用性的增加使本地群落对外来植物入侵的敏感性增加 Any changes increasing resource availability can increase invasion susceptibility of native community.	Davis et al, 2000
10	内禀优势假说 Inherent superiority hypothesis	成功入侵的外来种在形态、生理、生态、遗传和行为等特征上具备独特的 内禀优势 Successfully alien species have intrinsic characteristics superior to native species.	Elton, 1958; Sax & Brown, 2000
11	天敌逃逸假说 Enemy release hypothesis	外来种进入新的生态系统后,缺少特异性天敌控制,进而实现入侵 The absence of enemies in the exotic range is a cause of invasion success.	Keane & Crawley, 2002
12	新武器假说 Novel weapons hypothesis	外来种通过化感作用抑制本地种获得竞争优势 Alien species can have a competitive advantage against native species because of their allelopathic suppression to natives.	Callaway & Ridenour, 2004
13	防御转移假说 Shifting defence hypothesis	由于逃逸了专食性天敌的危害,外来种进化为对广食性天敌具有更强的抵抗力,而对专食性天敌抵抗力减弱 After releasing from specialist enemies, alien species will allocate more resource to cheap defences against generalist enemies and less resource to expensive defences against specialist enemies (this re-allocation is due to rapid post-invasion evolution).	Joshi & Vrieling, 2005
14	繁殖体压力假说 Propagule pressure hypothesis	繁殖体压力越大,成功入侵概率越高 High quantity, frequency and quality of propagule introductions increase chance of successful invasion.	Lockwood et al, 2005
15	"共生促进"假说 Enhanced mutualisms hypothesis	外来种在入侵地与对其定殖有强促进作用的微生物可形成良好的共生关系, 从而促进入侵 Some alien species have shown a remarkable ability to capitalize on novel but strong soil mutualists, which enhance their invasion success.	Reinhart & Callaway, 2006
16	病原菌积累假说 Accumulation of local pathogens hypothesis	外来种富集的本地病原菌可抑制本地种的生长,从而实现入侵 Accumulation of local pathogens by alien species could suppress growth of natives, which promotes invasion success of aliens.	Eppinga et al, 2006
17	环境异质性假说 Environmental heterogeneity hypothesis	异质性高的生境中具有更多的生态位,外来种可以占据其中可用的生态位 实现成功入侵 Heterogeneous environment contains a diverse array of niches, and alien species would be successful by filling the available niches.	Melbourne et al, 2007
18	氮分配进化假说 Hypothesis of the evolution of nitrogen allocation	外来植物进入入侵地之后进化为降低自身氮元素向防御作用的分配, 增加 氮向光合作用的转移 Comparing to native ranges, alien species evolve to decrease nitrogen allocation to defenses and increase nitrogen allocation to photosynthesis in introduced ranges.	Feng et al, 2009
19	国土安全假说 Homeland security hypothesis	由于缺少长期协同进化历史,外来植物对本地入侵植物分泌的化学物质更 敏感,因此本地植物可通过化感作用抵抗外来植物入侵 Native species can resistant alien plant invasion due to allelopathy.	Cummings et al, 2012

Appendix 1 Main hypotheses in plant invasion ecology and their corresponding references

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