

Curriculum vitae Franck RICHARD

1. ETAT CIVIL

Date de naissance : 06.10.1971

Nationalité : Français

Situation : Marié, 3 enfants

2. STATUT

Position académique : Professeur d'université, Université de Montpellier, France.

Laboratoire : Chercheur au Centre d'Ecologie Fonctionnelle et Evolutive CEFE – CNRS (UMR 5175), Montpellier, France

3. FORMATION

2000 : Master Université Paul Sabatier, Toulouse.

2004 : Doctorat Université Paul Sabatier, Toulouse.

2006 : Post-Doctorat, Harvard University, Department of Organismic and Evolutionary Biology (Pringle Lab), USA.

2007 : Maître de Conférence, Université de Montpellier

2017 : Professeur, Université de Montpellier

4. ENSEIGNEMENT

Professeur dans le département Biologie Ecologie de l'Université de Montpellier. Responsable du parcours de Master 1 Ecosystèmes.

5. EXPERTISE/EVALUATION DE LA RECHERCHE

• Conseil scientifique auprès des territoires

Conservatoire Botanique National de Corse (CBNC), Réserve de Biosphère du Fango (Corse), Parc Naturel Régional de Corse, Office National des Forêts Méditerranée (ONF Agence Méditerranée), Conservatoire d'Espaces Naturels du Languedoc-Roussillon (CEN L-R), Réserve Naturelle du bois de Païolive.

• Evaluateur de travaux scientifiques

Acta Oecologica, Acta Revue d'Ecologie, Annals of Forest Science, Biodiversity and Conservation, Canadian Journal of Forest Research, Ecology Letters, EcoScience, Environmental Microbiology, FEMS

Microbiology Ecology, Forest Pathology, Fungal Ecology, Human Ecology, Microbial Ecology, Mycologia, Mycorrhiza, New Phytologist, Oecologia, Oikos, Plant Ecology, PNAS.

6. RECHERCHE

- **Responsabilités collectives**

Responsable de l'équipe de recherche Taxonomie et Biogéographie des Interactions au laboratoire CFE (UMR 5175). Responsable du Système d'observation OCOVE de l'OREME (Observatoire de REcherche Méditerranéen de l'Environnement - OSU OREME).

Editeur associé pour : Frontiers in Plant Science, Cryptogamie Mycologie, Documents Mycologiques, Bulletins de la Fédération des Associations Mycologiques Méditerranéennes

- **Métriques**

Auteur de : 69 articles, 5 chapitres d'ouvrages, et 96 conférences.

Mots clés : écologie des communautés, symbiose ectomycorhizienne, Méditerranée, champignons, écologie du sol.

- **Publications (articles)**

Perret, J., Cobelli, O., Taudière, A., Andrieu, J., Aumeeruddy-Thomas, Y., Souissi, J. B., ... & **Richard, F.** (2023). Time to refine the geography of biodiversity hotspots by integrating molecular data: The Mediterranean Basin as a case study. *Biological Conservation*, 284, 110162.

Taschen, E., Callot, G., Savary, P., Sauve, M., Penuelas-Samaniego, Y., Rousset, F., Parlade, X., Selosse, M.-A. & **Richard, F.** (2022). Efficiency of the traditional practice of traps to stimulate black truffle production, and its ecological mechanisms. *Scientific reports*, 12(1), 1-12.

Gautier, M., Moreau, P. A., Boury, B., & **Richard, F.** (2022). Unravelling the French national fungal database: Geography, temporality, taxonomy and ecology of the recorded diversity. *Journal of Fungi*, 8(9), 926.

Authier, L., Violle, C. & **Richard, F.** (2022). Ectomycorrhizal networks in the Anthropocene: from natural ecosystems to urban planning. *Frontiers in Plant Science*, 2090.

Vogt-Schilb, H., **Richard, F.**, Malaval, J. C., Rapior, S., Fons, F., Bourgade, V., Schatz, B., Buentgen, U. & Moreau, P. A. (2022). Climate-induced long-term changes in the phenology of Mediterranean fungi. *Fungal Ecology*, 60, 101166.

Coq, S., Cárdenas, R. E., Mousain, D., Selosse, M. A., **Richard, F.**, & Hättenschwiler, S. (2022). Acquisition of nitrogen from tannin protein complexes in ectomycorrhizal pine seedlings. *Pedobiologia*, 150817.

Loizides, M., Alvarado, P., Moreau, P.-A., Assyov, B., Halasu, V., Stadler, M., Rinaldi, A., Marques, G., Zervakis, I., Borovička, J., Van Vooren, N., Grebenc, T., **Richard, F.**, Taşkin, H., Gube, M., Sammut, C., Agnello, C., Baroni, T.J., Crous, P., Fryssouli, V., Gonou, Z., Guidori, U., Gulden, G., Hansen, K., Kristiansen, R., Læssøe, T., Mateos, J., Miller, A., Moreno, G., Perić, B., Polemis, E., Salom, J.C., Siquier, J.L., Snabl, M., Weholt, O. & Bellanger, J.M. (2022). Has taxonomic vandalism gone too far? A case study, the rise of the pay-to-publish model and the pitfalls of *Morchella* systematics. *Mycological Progress*, 21(1), 7-38.

Sleiman, S., Bellanger, J. M., **Richard, F.**, & Stephan, J. (2021). First molecular-based contribution to the checklist of Lebanon macrofungi. *Mycotaxon*, 136(3), 687-687.

L. García de Jalón, J.-M. Limousin, **F. Richard**, A. Gessler, M. Peter, S. Hättenschwiler, & A. Milcu (2020). Microhabitat and ectomycorrhizal effects on the establishment, growth and survival of *Quercus ilex* L. seedlings under drought. *Plos one*, 15(6), e0229807.

60 (48) E. Schneider-Maunoury, E. Taschen, **F. Richard** & M.-A. Selosse (2020). Soil spore bank in *Tuber melanosporum*: up to 42% of fruitbodies remain unremoved in managed truffle grounds. *Mycorrhiza* (doi.org/10.1007/s00572-019-00912-3). IF 3.114.

E. Taschen, M. Sauve, B. Vincent, J. Parladé, D. van Tuinen, Y. Aumeeruddy-Thomas, B. Assenat, M.-A. Selosse & **F. Richard** (2019). Insight into the truffle brûlé: tripartite interactions between the black truffle (*Tuber melanosporum*), holm oak (*Quercus ilex*) and arbuscular mycorrhizal plants. *Plant and soil* (doi.org/10.1007/s11104-019-04340-2). IF 2.969.

M. Loizides, J.-M. Bellanger, B. Assyov, P.-A. Moreau & **F. Richard** (2019). Phylogenetic and distributional data on boletoid fungi (Boletaceae) in Cyprus and description of a new sampling methodology. *Data in Brief*, 104115.

M. Loizides, J.-M. Bellanger, B. Assyov, P.-A. Moreau & **F. Richard** (2019). Present status and future of boletoid fungi (Boletaceae) on the island of Cyprus: Cryptic and threatened diversity unravelled by ten-year study. *Fungal Ecology* 41, 65-81. IF 3.736.

J.C. Zamora , M. Svensson, R. Kirschner, I. Olariaga, S. Ryman, L.A. Parra, ... **F. Richard**, ... & M.C. Aime (2018). Considerations and consequences of allowing DNA sequence data as types of fungal taxa. *IMA fungus* 9(1), 167-185.55. IF 4.308.

M. Nagati, M. Roy, S. Manzi, **F. Richard**, A. Desrochers, M. Gardes & Y. Bergeron 2018. Impact of local forest composition on soil fungal communities in a mixed boreal forest. *Plant and Soil*, 1-13. IF 3.306.

A. Taudière, J.-M. Bellanger, C. Carcaillet, L. Hugot, F. Kjellberg, A. Lecanda, A. Lesne, P.-A. Moreau, K. Scharman, S. Leidel & F. Richard 2018. Diversity of foliar endophytic ascomycetes in the endemic Corsican pine forests. *Fungal Ecology* 36 : 128-140. IF 3.736

H. Vogt-Schilb, P.-A. Moreau, J.-C. Malaval, B. Schatz & **F. Richard** 2018. Effects of long-term landscape dynamics and city growth on biodiversity in the Mediterranean: the case study of Montpellier, France. *Urban Ecosystems*. IF 2.005

G. Delpon, H. Vogt-Schilb, F. Munoz, **F. Richard** & B. Schatz 2018. Diachronic variations in the distribution of butterflies and dragonflies linked to recent habitat changes in Western Europe. *Insect Conservation and Diversity*. IF 2.091.

L. Schneider-Maunoury, S. Leclercq, C. Clement, H. Coves, J. Lambourdiere, M. Sauve, **F. Richard**, M.-A. Selosse & E. Taschen 2018. Is *Tuber melanosporum* colonizing the roots of herbaceous, non-ectomycorrhizal plants? *Fungal Ecology* 31: 59-68. IF 3.736

J. Dupont, S. Dequin, T. Giraud, F. Le Tacon, S. Marsit, J. Ropars, **F. Richard** & M.-A. Selosse 2017. Fungi as source of food. *Microbiology Spectrum* 5(3).

M.-A. Selosse, L. Schneider-Maunoury, E. Taschen, F. Rousset & **F. Richard** 2017. Black Truffle, a Hermaphrodite with Forced Unisexual Behaviour. *Trends in microbiology*, 25(10): 784-787. IF 11.02

X.H. Du, Q. Zhao, E.H. Xia, L.Z. Gao, **F. Richard** & Z.L. Yang 2017. Mixed-reproductive strategies, competitive mating-type distribution and life cycle of fourteen black morel species. *Scientific Reports* 7 (1493). IF 4.85

- A. Taudière, J.-M. Bellanger, P.-A. Moreau, C. Carcaillet, A. Christophe, T. Læssøe, C. Panaiotis & **F. Richard** 2017. *Xylobolus subpileatus*, a specialized basidiomycete functionally linked to old canopy gaps. *Canadian Journal of Forest Research* **47**(7): 965-973. IF 1.68
- Hugot, P. Delbosc, C. Panaiotis, A. Delage, **F. Richard**, A. Taudière, F. Tomasi & F. Médail 2017. Châtaigner et végétations associées : des relations dynamiques. *Bulletin de la Société des sciences historiques et naturelles de la Corse*, **756/757** : 117-130.
- A. Paz, J.-M Bellanger, C. Lavoise, A. Molia, M. Lawriniwicz, E. Larsson, I Olariaga Ibargueren, M. Jeppson, T. Læssøe, M. Sauve, **F. Richard** & P.-A. Moreau 2017. The genus *Elaphomyces* (Ascomycota, Eurotiales): a ribosomal DNA-based phylogeny and revised systematics of European “deer truffles”. *Persoonia* **38**: 197-239. IF 5.72
- P. Blandin, H.-P. Aberlenc, C. Bauvet, N. Bianchin, A. Cockle-Bétian, A. Couté, G. Deso, R. Duguet, M. Gaymard, J.-F. Holtof, V. Hugonnot, A. Ladet, F. Lagarde, W. Lhermenier, M. Lhomme, D. Morin, C. Perette, **F. Richard** & F. Schwaab 2017. The Paiolive ecocomplex in southern Ardèche (France): a biodiversity peak in the Mediterranean hotspot. *Ecologia Mediterranea* **42**(2) : 51-95.
- U. Buntgen, I. Bagi, O. Fekete, V. Molinier, M. Peter, R. Spivalo, M. Vahdatzadeh, **F. Richard**, C. Murat, W. Tigel, U. Stobbe, F. Martinez-Pena, L. Sroll, D. Nievergelt, B. Meier & S. Egli 2017. New Insights into the complex relationship between weight and maturity of Burgundy truffles (*Tuber aestivum*). *PLoS one* **12**(1) : e0170375. IF 3.06
- J. Trap, M. Akpa-Vinceslas, P. Margerie, S. Boudsocq, **F. Richard**, T. Decaens & M. Aubert 2017. Slow decomposition of leaf litter from mature *Fagus sylvatica* trees promotes offspring nitrogen acquisition by interacting with ectomycorrhizal fungi. *Journal of Ecology* **105**(2) : 528–539. IF 6.18
- A. Taudière, **F. Richard** & C. Carcaillet 2017. Review on fire effects on ectomycorrhizal symbiosis, an unachieved work for a scalding topic. *Forest Ecology and Management* **391** : 446-457. IF 2.83
- E. Taschen, F. Rousset, S. Mathieu, L. Benoit, M.-P. Dubois, **F. Richard** & M.-A. Selosse 2016. How the truffle got its mate: insights from genetic structure in spontaneous and planted Mediterranean populations of *Tuber melanosporum*. *Molecular Ecology* **25**(22) : 5611-5627. IF 5.95
- P.-E. Courty, F. Munoz, M.-A. Selosse, M. Duchemin, S. Criquet, F. Ziarelli, M. Buee, C. Plassard, A. Taudière, J. Garbaye & **F. Richard** 2016. Into the functional ecology of ectomycorrhizal communities: environmental filtering of enzymatic activities. *Journal of Ecology* **104**(6) : 1585-1598. IF 6.18
- H. Vogt-Schilb, R. Pradel, P. Geniez, L. Hugot, A. Delage, **F. Richard** & B. Schatz 2016. Responses of orchids to habitat change in Corsica over 27 years. *Annals of Botany* **118**(1) : 115-123. IF 3.98
- M. Loizides, J.-M Bellanger, P. Clowez, **F. Richard** & P.-A. Moreau 2016. Combined phylogenetic and morphological studies of true morels (Pezizales, Ascomycota) in Cyprus reveal significant diversity, including *Morchella arbutiphila* and *M. disparilis* spp. nov. *Mycological Progress* **15**(4) : 1-28. IF 1.57
- A. Taudière, F. Munoz, A. Lesne, A.-C. Monnet, J.-M. Bellanger, M.-A. Selosse, P.-A. Moreau & **F. Richard** 2015. Beyond ectomycorrhizal bipartite networks: projected networks evidence contrasted patterns between early- and late-successional plants in Corsica. *Frontiers in Plant Science* **6** : 1-14. IF 4.49
- P.-A. Moreau, J.-M. Bellanger, S. Biancarelli & **F. Richard** 2015. *Albomagister alesandri* sp. nov., un nouvel élément du patrimoine naturel de la Corse. *Bulletin de la Fédération des Associations Mycologiques Méditerranéennes* **48**(2) : 7-14.

P. Baptista, F. Reis, E. Pereira, R.M. Tavares, **F. Richard**, M.-A. Selosse & T. Lino-Neto 2015. Soil DNA pyrosequencing and fruitbodies surveys reveal contrasting diversity for various fungal ecological guilds in chestnut orchards. *Environmental Microbiology Reports* 7(6) : 946-954. IF 3.50

H. Vogt-Schilb, F. Munoz, **F. Richard** & B. Schatz 2015. Recent declines and range changes of orchids in Western Europe (France, Belgium and Luxembourg). *Biological Conservation* 190 : 133-141. IF 3.98

B. Assyaov, J.-M. Bellanger, P. Berteau, R. Courtecuisse, G. Koller, M. Loizides, G. Marques, J.-A. Munoz, N. Oppicelli, D. Puddu, **F. Richard** & P.-A. Moreau 2015. Nomenclatural novelty: genus *Imperator*. Index Fungorum no-253.

E. Taschen, M. Sauve, A. Taudière, J. Parlade, M.-A. Selosse & **F. Richard** 2015. Whose truffle is this? Distribution patterns of ECM fungal diversity in *Tuber melanosporum* brûlés developed in multi-host Mediterranean plant communities. *Environmental Microbiology* 17(8) : 2747-2761. IF 5.93

J.-M. Bellanger, P.-A. Moreau, G. Corriol, A. Bidaud, R. Chalenge, Z. Dudova, & **F. Richard** 2015. Plunging hands into the mushroom jar: a phylogenetic framework for Lyophyllaceae (Agaricales, Basidiomycota). *Genetica* 143(2) : 169-194. IF 1.34

F. Richard, J.-M. Bellanger, P. Clowez, R. Courtecuisse, K. Hansen, K. O'Donnell, M. Sauve, A. Urban & P.-A. Moreau 2015. True morels (*Morchella*, Pezizales) of Europe and North America: evolutionary relationships inferred from multilocus data and a unified taxonomy. *Mycologia* 107(2) : 359-382. IF 2.64

C. Henry, M.-A Selosse, **F. Richard**, H. Ramanankierana & M. Ducouso 2014. Comprendre la dynamique des communautés mycorhiziennes lors des successions végétales: méthodes d'étude, caractérisations et fonctionnement. *Revue Forestière Française* 2 : 125-150.

P.-A. Moreau, J. Vila, C. Aime, V. Antonin, E. Horak, J.-L. Perez-Butron, **F. Richard**, A. Urban & A. Vizzini 2014. *Cibaomyces* and *Cyptotrama*, two new genera for Europe, and an emendation of *Rhizomarasmius* (Basidiomycota, Physalacriaceae). *Mycological Progress* 14(2) : 4-19. IF 1.57

H. Vogt-Schilb, P. Geniez, R. Pradel, **F. Richard** & B. Schatz 2014. Inter-annual variability in flowering of orchids: lessons learned from 8 years monitoring in a Mediterranean region of France. *European Journal of Environmental Sciences*, 3(2) : 129-137. (2)

P.-A. Moreau, J.-M. Bellanger, P. Clowez, R. Courtecuisse, K. Hansen, H. Knudsen, K. O'Donnell & **F. Richard** 2014. Proposal to conserve the name *Morchella semilibera* against *Morchella crassipes*, *M. gigas* and *M. undosa* (Ascomycota). *Taxon* 63(3) : 677-678. IF 2.91

O Shahin, N. Martin, S. Rambal, R. Joffre & **F. Richard** 2013. Ectomycorrhizal distribution of fungal diversity in *Quercus ilex* Mediterranean woodlands: variation among sites-to-site variation and over influence of soil depth profiles in on hyphal exploration types, species richness and community composition. *Symbiosis* 61(1) : 1-12. IF 1.28

A. Paz, C. Lavoise, L. Barrio, **F. Richard** & P.-A. Moreau 2012. Propuesta de dos nuevas especies del genero *Elaphomyces*, dos primeras citas para la Peninsula Iberica y una clave de identificacion del genero para Europa. *Bulletin Micologico de FAMCAL* 7 : 85-103. (1)

Y. Hashimoto, S. Fukuwawa, A. Kunishi, H. Suga, **F. Richard**, M. Sauve & M.-A. Selosse 2012. Mycoheterotrophic germination of *Pyrola asarifolia* dust seeds reveals convergences with germination in orchids. *New Phytologist* 195(3) : 620-630. IF 7.21

Y. Thomas, C. Therville & **F. Richard** 2012. The chestnut domestic forest and the truffle-holm oak wood agroecosystem in Languedoc Roussillon (France): knowledge recomposition, socio-cultural resilience and innovations. *Ecology and Society* 17(2). IF 2.89

F. Richard, L. Glass & A. Pringle 2012. Cooperation at early life history stages facilitates germination and colony growth of the model eukaryote *Neurospora crassa*. *Biology Letters* **8**(3) : 419-422. IF 2.82

C. Piazza, L. Hugot, F. Richard & B. Schatz 2011. Bilan des opérations de conservation *in situ* réalisées entre 1987 et 2004 en Corse: quelles leçons pour demain. *Ecologia Mediterranea* **37**(2) : 7-16.

K. Pritsch., M.A. Ali, J.-L. Churin, B. Cloutier-Hurteau, P.-E. Courty, C. Damon, M. Duchemin, S. Egli, J. Ernst, L. Fraissinet-Tachet, F. Kuhar, E. Legname, R. Marmeisse, A. Muller, P. Nikolova, M. Peter, C. Plassard, F. Richard, M. Scholter, M.-A. Selosse & J. Garbaye 2011. Optimized assay and storage conditions for enzymatic activity profiling of ectomycorrhizae. *Mycorrhiza* **21**(7) : 589-600. IF 3.25

P.-A. Moreau, J. Crochet, F. Chassagne, F. Richard & M. Gardes 2011. Taxonomy of *Alnus*-associated hypogeous species of *Alpova* and *Melanogaster* (Basidiomycota, Paxillaceae) in Europe. *Cryptogamie, Mycologie* **32**(1) : 33-62. IF 1.51

F. Richard, M. Roy, O. Shahin, C. Sthultz, M. Duchemin, R. Joffre & M.-A. Selosse 2011. Ectomycorrhizal communities in a Mediterranean forest ecosystem dominated by *Quercus ilex*: seasonal dynamics and response to drought. *Annals of Forest Science* **68**(1) : 57-68. IF 2.09

F. Richard, P. Simeoni, J. Poyelle, M.-A. Selosse & H. Gryta 2010. Ecologie et biométrie de l'Amanite des Césars [*Amanita caesarea* (Scop. : Fr.) Pers.] en Corse : leçons issues de onze années de suivi diachronique en forêt du Fango. *Bulletin de la Fédération des Associations Mycologiques Méditerranéennes* **38**(1) : 23-29.

B. Wolfe, F. Richard, H. Cross & A. Pringle 2010. Distribution and abundance of the introduced ectomycorrhizal fungus, *Amanita phalloides*, in North America. *New Phytologist* **185**(3) : 803-816. IF 7.21

M. Roy, S. Watthana, A. Stier, F. Richard, S. Vessabutr & M.-A. Selosse 2009. Mycoheterotrophic orchids from Thailand tropical forests associate with a broad diversity of ectomycorrhizal fungi. *BMC Biology* **7**(51). IF 6.97

F. Archaux, S. Camaret, J.-L. Dupouey, E. Ulrich, E. Corcket, L. Bourjot, A. Brethes, R. Chevallier, J.-F. Dobremez, Y. Dumas, G. Dume, M. Foret, F. Forgeard, M. Lebret Gallet, J.-F. Picard, F. Richard, J.-M. Savoie, L. Seytre, J. Timbal & J. Touffet 2009. Can we reliably estimate species richness with large plots? An assessment through calibration training. *Plant Ecology* **203** : 303-315. IF 1.49

F. Richard, M.-A. Selosse & M. Gardes 2009. Establishment of *Quercus ilex* seedlings under two early successional ericaceous shrubs in a Mediterranean ecosystem: role of mycorrhizal fungi. *FEMS Microbiology Ecology* **68** : 14-24. IF 3.53

L. Vincenot, L. Tedersoo, F. Richard, H. Horcine, U. Koljalg & M.-A. Selosse 2008. Fungal associates of *Pyrola rotundifolia*, a mixotrophic Ericaceae, from two Estonian boreal forests. *Mycorrhiza* **19**(1) : 15-25. IF 3.25

M.-A. Selosse, S. Setaro, F. Glatard, F. Richard, C. Urcelay & M. Weiss 2007. Sebacinales are common mycorrhizal associates of Ericaceae. *New Phytologist*, **174** (4) : 864-878. IF 7.21

P.A. Moreau, G. Corriol, D. Borgarino, C. Lavoise, F. Richard & M.-A. Selosse 2007. Contribution à la connaissance des champignons de l'étage thermoméditerranéen corse II. *Bulletin de la Fédération des Associations Mycologiques Méditerranéennes* **29** : 5-26. (11)

C. Mattei, P. Benedetti, E. Bideau, F. Richard, J.-P. Mariani, E. Aledo, J. Antonelli, F. Orsetti, V. Muraccioli, M.-L. Castelli, B. Recorbet & G. Feracci 2006. Stratégie, méthodes et enjeux de la gestion du mouflon en Corse à travers un projet LIFE. *Bulletin des Travaux Scientifiques du Parc Naturel Régional de la Corse* **62** : 41-61.

D. Borgarino, P.-A. Moreau & **F. Richard** 2006. Une espèce hydnoidée nouvelle pour la France : *Beenakia mediterranea*, comb. nov. *Bulletin de la Société Mycologique de France* **121**(3-4) : 187-199. (3)

F. Richard & M.-A. Selosse 2006. Phénologie des fructifications de macromycètes ectomycorhiziens associés à la forêt de chêne vert : cas de la yeuseraie du Fango (Haute-Corse). *Bulletin de la Fédération des Associations Mycologiques Méditerranéennes* **29**(1) : 4-13.

M.-A. Selosse, **F. Richard**, X. He & S.W. Simard 2006. Mycorrhizal networks: les liaisons dangereuses ? *Trends in Ecology and Evolution* **21** (11) : 621-627. IF 16.73

F. Richard, S. Millot, M. Gardes & M.-A. Selosse 2005. Diversity and specificity of ectomycorrhizal fungi retrieved from an old-growth Mediterranean forest dominated by *Quercus ilex* L. *The New Phytologist* **166** : 1011-1023. IF 7.21

F. Richard, P.-A. Moreau, M.-A. Selosse & M. Gardes 2004. Diversity and fruiting patterns of ectomycorrhizal and saprobic fungi in an old-growth Mediterranean forest dominated by *Quercus ilex* L. *Canadian Journal of Botany* **82**(12) : 1711-1729. IF 1.32