



Sommaire / Contents

volume 333, janvier–décembre 2010 / January–December 2010

Biomodélisation / *Biological modelling*

- Study of the binding residues between ANEP11 and insect sodium channel receptor, **Yong-Bo Song, Lin Ma, Wen-Yao Yang, Jian Wang, Mao-Sheng Cheng, Chun-Fu Wu, Jing-Hai Zhang** 637
- Expanding the modern synthesis, **Rodrick Wallace** ... 701
- Systems biology and the origins of life? Part I. Are biochemical networks possible ancestors of living systems? Reproduction, identity and sensitivity to signals of biochemical networks, **Jacques Ricard** 761
- Systems biology and the origins of life? Part II. Are biochemical networks possible ancestors of living systems? Networks of catalysed chemical reactions: Non-equilibrium, self-organization and evolution, **Jacques Ricard** 769
- Calibration and validation of a genetic regulatory network model describing the production of the protein Hunchback in *Drosophila* early development, **Rui Dilão, Daniele Muraro**..... 779
- Analysis of the effects of fragmentation-coagulation in planktology, **Suares Clovis Oukouomi Noutchie** 789

Le point sur / *Concise review*

- Les isoformes neuronales des tyrosines kinases Src, Fyn et Lck: rôle particulier de la p56lckN dans la survie neuronale, **Evelyne Rouer**..... 1
- Evolutionary genomics of C_4 photosynthesis in grasses requires a large species sampling, **Guillaume Besnard, Pascal-Antoine Christin** 577

Biologie et génétique moléculaires / *Molecular biology and genetics*

- Performance of distance-based DNA barcoding in the molecular identification of Primates, **Vincent Nijman, Mansour Aliabadian** 11
- Genetic identification of Southern Ocean octopod samples using mtCOI, **Eivind Andreas Baste Undheim,**

- Janette Ann Norman, Hanne Halkinrud Thoen, Bryan Grieg Fry**..... 395
- The anatomy of an aphid genome: From sequence to biology, **Denis Tagu, Sébastien Dugravot, Yannick Outreman, Claude Rispe, Jean-Christophe Simon, Stefano Colella** 464
- Host plant resistance to aphids in cultivated crops: Genetic and molecular bases, and interactions with aphid populations, **Catherine Dogimont, Abdelhafid Ben-dahmane, Véronique Chovelon, Nathalie Boissot** 566
- Molecular genetic diversity and population structure in *Lycium* accessions using SSR markers, **Wei-Guo Zhao, Jong-Wook Chung, Young-Il Cho, Won-Hee Rha, Gi-An Lee, Kyung-Ho Ma, Sin-Hee Han, Kyong-Hwan Bang, Chung-Berm Park, Seong-Min Kim, Yong-Jin Park** 793

Génétique / *Genetics*

- Evaluation of the genetic trend of milk yield in the multiple ovulation and embryo transfer populations of dairy cows, using stochastic simulation, **Navid Ghavi Hosseinzadeh** 710
- A novel *Ta.AGPS.1b* transcript in Chinese common wheat (*Triticum aestivum* L.), **Guo-Zhang Kang, Bei-Bei Zheng, Bing-Quan Shen, Hui-Fang Peng, Tian-Cai Guo**..... 716

Biochimie / *Biochemistry*

- Enzymatic properties of α -amylase in the midgut and the salivary glands of mulberry moth, *Glyphodes pyloalis* Walker (Lepidoptera: Pyralidae), **Elham Yezdani, Jalal Jalali Sendi, Arash Zibae, Mohammad Ghadamyari** 17
- Compatible plant-aphid interactions: How aphids manipulate plant responses, **Philippe Giordanengo, Laurence Brunissen, Christine Rusterucci, Charles Vincent, Aart van Bel, Sylvie Dinant, Christine Gironse, Mireille Faucher, Jean-Louis Bonnemain**.... 516

- Lipid components of olive oil from Tunisian Cv. Sayali: Characterization and authenticity, **Faouzi Sakouhi, Christelle Absalon, Guido Flamini, Pier Luigi Cioni, Habib Kallel, Sadok Boukhchina** 642

Neurosciences / Neurosciences

- Aluminum affects glial system and behavior of rats, **Hasna Erazi, Wafa Sansar, Samir Ahboucha, Halima Gamrani** 23
- In vitro interactions between bone marrow stromal cells and hippocampal slice cultures, **Karine Charrière, Pierre-Yves Risold, Dominique Fellmann** 582

Physiologie / Physiology

- Partial biochemical characterization of α - and β -glucosidases of lesser mulberry pyralid, *Glyphodes pyloalis* Walker (Lep.: Pyralidae), **Mohammad Ghadamyari, Vahid Hosseinaveh, Mahboobe Sharifi** 197
- Effects of water deficit stress on growth, water relations and osmolyte accumulation in *Medicago truncatula* and *M. laciniata* populations, **Nasreddine Yousfi, Inès Slama, Tahar Ghnaya, Arnould Savouré, Chedly Abdely** 205
- Évaluation du contenu surrénalien en androstènedione et effets de la castration chez le lapin domestique (*Oryctolagus cuniculus*), **Faroudja Kandsi-Bouhadad, Fatima Hadj-Bekkouche** 591
- Chromium stress in paddy: (i) Nutrient status of paddy under chromium stress; (ii) Phytoremediation of chromium by aquatic and terrestrial weeds, **Perumal Sundaramoorthy, Alagappan Chidambaram, Kaliyaperumal Sankar Ganesh, Pachikaran Unnikannan, Logalakshmanan Baskaran** 597
- Oxidative damage and redox change in pea seeds treated with cadmium, **Moêz Smiri, Abdelilah Chaoui, Nicolas Rouhier, Eric Gelhaye, Jean-Pierre Jacquot, Ezzedine El Ferjani** 801

Biologie et pathologie animales / Animal biology and pathology

- Digestive cells in the midgut of *Triatoma vitticeps* (Stal, 1859) in different starvation periods, **Lamara Laguardia Valente Rocha, Clóvis Andrade Neves, José Cola Zanuncio, José Eduardo Serrão** 405
- Systématique du Gobiidae *Lophogobius cyprinoides* (Pallas, 1770), **Jean-Luc Bouchereau, Félix Muller, Olivier Gros** 649
- Digestive enzymes activity in larvae of *Cameraria ohridella* (Lepidoptera: Gracillariidae), **Dominika Stygar, Bogdan Dolezych, Mirosław Nakonieczny, Pawel Migula, Katarzyna Michalczyk, Maria Zaak** ... 725

Biologie et pathologie végétales / Plant biology and pathology

- Effects of storage conditions on sprouting of microtubers of yam (*Dioscorea cayenensis*-*D. rotundata* complex), **Paul Ondo Ovono, Claire Kevers, Jacques Dommes** 28
- Specificities of plant development, **Michel Caboche** ... 288
- Auxin: A major regulator of organogenesis, **Isabelle Bohn-Courseau** 290
- Recent progress in auxin biology, **Alexandre Tromas, Catherine Perrot-Rechenmann** 297
- The phloem pathway: New issues and old debates, **Sylvie Dinant, Rémi Lemoine** 307
- Regulation of anisotropic cell expansion in higher plants, **Elizabeth Faris Crowell, Martine Gonneau, Samantha Vernhettes, Herman Höfte** 320
- Wood formation in Angiosperms, **Annabelle Déjardin, Françoise Laurans, Dominique Arnaud, Christian Breton, Gilles Pilate, Jean-Charles Leplé** 325
- The root cap at the forefront, **Carole Arnaud, Clémence Bonnot, Thierry Desnos, Laurent Nussaume** 335
- Strigolactones, a novel class of plant hormone controlling shoot branching, **Catherine Rameau** 344
- Leaving the meristem behind: The genetic and molecular control of leaf patterning and morphogenesis, **Alice Hasson, Thomas Blein, Patrick Laufs** 350
- Role of very-long-chain fatty acids in plant development, when chain length does matter, **Liên Bach, Jean-Denis Faure** 361
- Plant development: A TALE story, **Olivier Hamant, Véronique Pautot** 371
- Senescence and death of plant organs: Nutrient recycling and developmental regulation, **Anne Guiboileau, Rodnay Sormani, Christian Meyer, Céline Masclaux-Daubresse** 382
- Plant development: A new old story, **Christian Dumas** ... 392
- Phloem sap intricacy and interplay with aphid feeding, **Sylvie Dinant, Jean-Louis Bonnemain, Christine Girousse, Julia Kehr** 504
- Assessment of polyphenolic compounds, in vitro anti-oxidant and anti-inflammation properties of *Securidaca longepedunculata* root barks, **François Nsemi Muanda, Amadou Dicko, Rachid Soulimani** 663
- Identification of phenylacetic acid produced by *Fusarium oxysporum* f. sp. *albedinis*, the causal agent of bayoud, using GC-MS, **Tassadit Ait Kettout, F. Rahmania** 808
- Enzymatic adaptations to arsenic-induced oxidative stress in *Zea mays* and genotoxic effect of arsenic in root

- tips of *Vicia faba* and *Zea mays*, **Isabelle Duquesnoy, Gabrielle Marie Champeau, Germaine Evray, Gérard Ledoigt, Agnès Piquet-Pissaloux** 814
- Pharmacologie, toxicologie / Pharmacology, toxicology**
- Neuropharmacological screening of two 1,5-benzodiazepine compounds in mice, **Wafa Ben-Cherif, Rafik Gharbi, Hichem Sebai, Dorra Dridi, Naceur A. Boughattas, Mossadok Ben-Attia** 214
 - Testicular steroidogenesis is not altered by 137 cesium Chernobyl fallout, following *in utero* or post-natal chronic exposure, **Elise Grignard, Yann Guéguen, Stéphane Grison, Isabelle Dublineau, Patrick Gourmelon, Maâmar Souidi** 416
 - Criblage pharmacologique primaire d'une plante endémique originaire du Sud Marocain (*Tetraena gattula* [Emb. & Maire] Beier & Thulin), **Amal El Hamsas El Youbi, Dalila Boust, Ibtissam Ouahidi, Lotfi Aarab** 736
- Sciences médicales / Medical sciences**
- HIV-1 infection: Functional competition between gp41 and interleukin-2, **Kamel Sanhadji, Jean-Claude Tardy, Jean-Louis Touraine** 608
- Biophysique / Biophysics**
- In vivo preclinical low field MRI monitoring of tumor growth following a suicide gene therapy in an orthotopic mice model of human glioblastoma, **Élodie Breton, Christian Goetz, Jacqueline Kintz, Nathalie Accart, Gaëlle Aubertin, Bernard Grellier, Philippe Erbs, Ronald Rooke, André Constantinesco, Philippe Choquet** 220
- Biologie des populations / Population biology**
- Elevation-induced variations of pollen assemblages in the North-western Alps: An analysis of their value as temperature indicators, **Elena Ortu, Stefan Klotz, Eli-sabetta Brugiapaglia, Rosanna Caramiello, Consolata Siniscalco** 825
- Écologie / Ecology**
- Nest relocation and high mortality rate in a Neotropical social wasp: Impact of an exceptionally rainy *La Niña* year, **Alain Dejean, James M. Carpenter, Marc Gibernau, Maurice Leponce, Bruno Corbara** 35
 - The disrupted pattern of distribution of the genus *Hadrurochactas* Pocock; evidence of past connections between Amazon and the Brazilian Atlantic forest, **Wilson R. Lourenço** 41
 - Arthropod fauna on grassland–heathland associations under different grazing managements with domestic ruminants, **Rocío Rosa García, Francisco José Ocharan, Urcesino García, Koldo Osoro, Rafael Celaya** 226
 - Expansion of green alder (*Alnus alnobetula* [Ehrh] K. Koch) in the northern French Alps: A palaeoecological point of view, **Fernand David** 424
 - Why certain male grasshoppers have clubbed antennae?, **Pascaline Dumas, Guillaume Tetreau, Daniel Petit** ... 429
 - Aphids in the face of global changes, **Maurice Hulle, Armelle Cœur d'Acier, Stéphanie Bankhead-Dronnet, Richard Harrington** 497
 - Aphids as transport devices for plant viruses, **Véronique Brault, Maryline Uzet, Baptiste Monsion, Emmanuel Jacquot, Stéphane Blanc** 524
 - The conflicting relationships between aphids and men: A review of aphid damage and control strategies, **Charles-Antoine Dedryver, Anne Le Ralec, Frédéric Fabre** 539
 - Evolutionary ecology of the interactions between aphids and their parasitoids, **Anne Le Ralec, Caroline Anselme, Yannick Outreman, Marylène Poirié, Joan van Baaren, Cécile Le Lann, Jacques J.-M. van Alphen** 554
 - Biological influences on inter- and intraspecific isotopic variability among paired chondrostome fishes, **Martial Durbec, Bénédicte Nguyen The, Jonathan Grey, Christopher Harrod, Nicolas Stolzenberg, Rémi Chappaz, Laurent Cavalli** 613
 - *Cedrus libani* (A. Rich) distribution in Lebanon: Past, present and future, **Lara Hajar, Louis François, Carla Khater, Ihab Jomaa, Michel Déqué, Rachid Cheddadi** 622
 - Impact of grazing on the species richness of plant communities in Mediterranean temporary pools (western Morocco), **Siham Bouahim, Laïla Rhazi, Btissam Amami, Nargis Sahib, Mouhssine Rhazi, Aline Waterkeyn, Abdelmjid Zouahri, François Mesleard, Serge D. Muller, Patrick Grillas** 670
 - Nouvelles contributions à l'histoire tardiglaciaire et holocène de la végétation en Algérie : analyses polliniques de deux profils sédimentaires du complexe humide d'El-Kala, **Mohamed Benslama, Valérie Andrieu-Ponel, Frédéric Guiter, Maurice Reille, Jacques-Louis de Beau-lieu, Jérémy Migliore, Morteza Djamali** 744
 - Effect of vertebrate and invertebrate kairomones on the life history of *Daphnia magna* Straus (Crustacea: Branchiopoda), **Khemissa Chakri, Laïd Touati, Ahmed H. Alfarhan, Khaled A.S. Al-Rasheid, Boudjéma Samraoui** 836
 - A focus on long-run sustainability of a harvested prey predator system in the presence of alternative prey, **T.K. Kar, S.K. Chattopadhyay** 841
- Évolution / Evolution**
- Dissecting the major American snake radiation: A molecular phylogeny of the Dipsadidae Bonaparte

(Serpentes, Caeophidia), Nicolas Vidal, Maël Dewynter, David J. Gower	48
• On Darwin's palaeontology in <i>The Origin of Species</i> , Armand de Ricqlès	87
• Darwin the geologist: Between Lyell and von Buch, Gabriel Gohau	95
• Darwin and barnacles, Jean Deutsch	99
• Minute observations and theoretical framework of Darwin's studies on climbing plants, Jean-Marc Drouin, Thierry Deroin	107
• Cross- and self-fertilization of plants, Michael Ruse	112
• Darwin teleologist? Design in the Orchids, Thierry Hoquet	119
• The Darwin of pangenesis, Jonathan Hodge	129
• Sexual selection: Another Darwinian process, Jean Gayon	134
• Darwin and sexual selection: One hundred years of misunderstanding, Michel Veuille	145
• Darwin on woman, Claudine Cohen	157
• Darwin's apes and "savages", Jorge Martínez-Contreras	166
• Altruism and fairness: Unnatural selection?, Camilo J. Cela-Conde, Lucrecia Burges, Marcos Nadal, Antonio Olivera	174
• Darwin's puzzling <i>Expression</i> , Gregory Radick	181
• Darwin as a student of behavior, Bernard Thierry	188
• <i>Sussemionus</i> , a new subgenus of <i>Equus</i> (Perissodactyla, Mammalia), Véra Eisenmann	235
• Studying sources of incongruence in arthropod molecular phylogenies: Sea spiders (Pycnogonida) as a case study, Juliette Arabi, Corinne Cruaud, Arnaud Couloux, Alexandre Hassanin	438
• Evolutionary history of aphid-plant associations and their role in aphid diversification, Jean Peccoud, Jean-Christophe Simon, Carol von Dohlen, Armelle Coeur d'acier, Manuel Plantegenest, Flavie Vanlerberghe-Masutti, Emmanuelle Jousselein	474
• Evolutionary and functional insights into reproductive strategies of aphids, Jean-Christophe Simon, Solenn Stoeckel, Denis Tagu	488
• The phylogenetic position of the 'living fossils' <i>Neoglyphea</i> and <i>Laurentaeglyphea</i> (Decapoda: Glypheidea), Marie-Catherine Boisselier-Dubayle, Céline Bonillo, Corinne Cruaud, Arnaud Couloux, Bertrand Richer de Forges, Nicolas Vidal	755
• A three-thousand-year history of vegetation and human impact in Burgundy (France) reconstructed from pollen and non-pollen palynomorphs analysis, Angélique Laine, Emilie Gauthier, Jean-Pierre Garcia, Christophe Petit, Frédéric Cruz, Hervé Richard	850

Taxinomie / Taxonomy

- On the type material of *Lepidosiren paradoxa* Fitzinger, 1837 (Sarcopterygii, Dipnoi), **Lúcio Paulo Machado, Helmut Wellendorf, Paulo M. Brito**
- *Gymnocranius oblongus*, a new large-eye bream species from New Caledonia (Teleostei: Lethrinidae), **Philippe Borsa, Philippe Béarez, Wei-Jen Chen**
- Morphometric analysis of six *Gerbillus* species (Rodentia, Gerbillinae) from Tunisia, **Awatef Abiadh, Paolo Colangelo, Ernesto Capanna, Tahar Lamine-Cheniti, M'barek Chetoui**

Agronomie / Agronomy

- Biomass accumulation and energy conversion efficiency in aromatic rice genotypes, **S.M. Shahidullah, M.M. Hanafi, M. Ashrafuzzaman, M. Razi Ismail, M.A. Salam, A. Khair**
- Fatty acid composition of canola (*Brassica napus* L.), as affected by agronomical, genotypic and environmental parameters, **Heshmat Omid, Zeinaldin Tahmasebi, Hassan Ali Naghdi Badi, Hossein Torabi, Mohammad Miransari**
- Coordination between plant and apex development in *Hordeum vulgare* ssp. *distichum*, **Iduna Arduini, Laura Ercoli, Marco Mariotti, Alessandro Masoni**

Éthologie / Ethology

- Emergence and dispersal relative to natal nest in the digger wasp *Stizus continuus* (Hymenoptera: Crabronidae), **Carlo Polidori, Irene Giordani, Pablo Mendiola, Josep D. Asís, José Tormos, Jesús Selfa**
- Begging coordination between siblings in Black-headed Gulls, **Alain Blanc, Nicolas Ogier, Angélique Roux, Sébastien Denizeau, Nicolas Mathevon**

Biodiversité / Biodiversity

- The role of water chemistry in the distribution of *Austropotamobius pallipes* (Crustacea Decapoda Astacidae) in Piedmont (Italy), **Livio Favaro, Tina Tirelli, Daniela Pessani**
- How habitat disturbance benefits geckos: Conservation implications, **Ivan Ineich**
- Structures de végétation et conservation des zones humides temporaires méditerranéennes : la région des Mogods (Tunisie septentrionale), **Hafawa Ferchichi-Ben Jamaa, Serge D. Muller, Amina Daoud-Bouattour, Zeineb Ghrabi-Gammar, Laila Rhazi, Ingeborg Soulié-Märsche, Mounira Ouali, Semia Ben Saad-Limam**
- A new relictual buthid scorpion from the region of the Great Rift Valley in Kenya (Scorpiones, Buthidae), **Wilson R. Lourenço, Bernard Duhem, John L. Cloudsley-Thompson**

- Buthid scorpions found in caves; a new species of *Iso-*
metrus Ehrenberg, 1828 (Scorpiones, Buthidae) from
southern Vietnam, **Wilson R. Lourenço, Bernard**
Duhem 631
- Patterns of emblematic habitat types in Mediterra-
nean temporary wetlands, **Simonetta Bagella, Maria**
Carmela Caria, Vincenzo Zuccarello..... 694
- The geographical pattern of distribution of the genus
Teuthraustes Simon (Scorpiones, Chactidae) in South
America and description of a new species, **Wilson R.**
Lourenço, Bernard Duhem 858

Editorial

- A non-Darwinian Darwin: An introduction, **Jean Gayon,**
Michel Veuille..... 83
- Foreword, **Georges Pelletier, Jean-François Morot-Gaudry**.... 287
- Aphids as biological models and agricultural pests, **Jean-**
Louis Bonnemain..... 461

Erratum

- Erratum to the article: Neuronal replacement in micro-
circuits of the adult olfactory system [C. R. Biologies 330
(6–7) (2007) 510–520], **Pierre-Marie Lledo, Françoise**
Lazarini..... 286