

2102

**Amplified ribosomal DNA restriction analysis as a routine tool to assess toxicant driven changes in hindgut bacterial populations of *Porcellio dilatatus* (Crustacea: Isopoda)**

Miguel J. G. Santos, José Paulo Sousa, Igor Tiago, António Veríssimo and Marco F. L. Lemos\*

Amplified Ribosomal DNA Restriction Analysis (ARDRA) was assessed as a potential simple molecular tool to assess shifts in bacterial community structure in hindgut populations of *Porcellio dilatatus* exposed to zinc and chlorpyrifos contaminated food.

PAPERS

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2105

**Study design considerations for assessing the health of fish populations impacted by agriculture in developing countries: a Sri Lankan case study**

Jayakody A. Sumith\* and Kelly R. Munkittrick

A study design for a monitoring program assessing the ecological importance of agricultural impacts on fish in South and Southeast Asian river systems.

2124

**Evidence of highly dynamic geochemical behaviour of zinc in the Deûle river (northern France)**

Beatriz Lourino-Cabana, Gabriel Billon,\* Aurélie Magnier, Emilie Prygiel, Willy Baeyens, Jean Prygiel, Oyvind Mikkelsen and Baghdad Ouddane

Zinc and lead were monitored for several weeks every two hours by using an ATMS (Automatic Trace metal Monitoring System) to determine their electrolabile concentrations.

2134

**Chemical composition, sources, solubility, and transport of aerosol trace elements in a tropical region**

Adriana Gioda,\* Beatriz Silva Amaral, Isabela Luizi Gonçalves Monteiro and Tatiana Dillenburg Saint’Pierre

We determine the chemical composition of aerosol samples collected in Rio de Janeiro under local and long-range transport influences to better understand their transport, deposition and health impacts.

2143

**Changes in maternal blood concentrations of selected essential and toxic elements during and after pregnancy**

Solrunn Hansen,\* Evert Nieboer, Torkjel M. Sandanger, Tom Wilsgaard, Yngvar Thomassen, Anna Sofia Veyhe and Jon Øyvind Odland

Concentration trends of toxic and essential elements in maternal blood during pregnancy and the postpartum period are interpreted in the context of their biochemistry and blood compartment preferences, and underlying metabolic and physiological changes that occur in mothers.

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2153

**Aluminium in UK rivers: a need for integrated research related to kinetic factors, colloidal transport, carbon and habitat**

Colin Neal, Philip Rowland,\* Margaret Neal, Helen P. Jarvie, Alan Lawlor, Darren Sleep and Paul Scholefield

The site at the centre of Britain (River Dunsop) exhibits anomalously high Al at neutral pH.

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2165

**Evaluation of a tape-stripping technique for measuring dermal exposure to pyrene and benzo(a)pyrene**

Ronny Kammer,\* Håkan Tinnerberg and Kåre Eriksson

Dermal exposure is a common route of exposure for many occupations, among them chimney sweepers.

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2172

**Non-invasive measurement of carbon monoxide burden in Guatemalan children and adults following wood-fired *temazcal* (sauna-bath) use**

Nick Lam, Mark Nicas, Ilse Ruiz-Mercado, Lisa M. Thompson, Carolina Romero and Kirk R. Smith

Newly developed portable CO-oximetry devices are potentially useful for measuring CO burden in children exposed to biomass smoke, but until now have not been compared to other methods under field conditions.

2182

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**Migration of As, Hg, Pb, and Zn in arroyo sediments from a semiarid coastal system influenced by the abandoned gold mining district at El Triunfo, Baja California Sur, Mexico**

Ana Judith Marmolejo-Rodríguez,\*  
Martha Alicia Sánchez-Martínez,  
Juan Armando Romero-Guadarrama,  
Alberto Sánchez-González and Víctor  
René Magallanes-Ordóñez

Abandoned gold mine, as a source of contamination of As, Hg, Pb, and Zn, in arroyo sediments from a semiarid coastal system.

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2190

**A statistical approach for the assessment and redesign of the Nile Delta drainage system water-quality-monitoring locations**

B. Khalil,\* T. B. M. J. Ouarda and A. St-Hilaire

This paper presents a new methodology for the assessment and redesign of surface water-quality-monitoring locations. The methodology allows identifying the optimal combination of locations to discontinue, locations to continuously measure and sub-basins where monitoring locations should be added.

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2206

**Sources and fate of *Salmonella* and fecal indicator bacteria in an urban creek**

Lauren M. Sassoubre, Sarah P. Walters, Todd L. Russell and Alexandria B. Boehm\*

This research aimed to understand the sources and fate of *Salmonella* and fecal bacteria in urban surface waters.

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2213

**Infrared differential absorption Lidar (DIAL) measurements of hydrocarbon emissions**

Rod Robinson,\* Tom Gardiner, Fabrizio Innocenti, Peter Woods and Marc Coleman

We report a differential absorption Lidar (DIAL) system capable of infrared measurements and its application at petrochemical and landfill sites.

2221

**Dynamics of steroid estrogen daily concentrations in hospital effluent and connected waste water treatment plant**

Miha Avberšek, Jernej Šömen and Ester Heath\*

Hospital effluent and waste water treatment plant influent and effluent were investigated for the presence of steroid estrogens and their inter-day dynamics.

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2227

**Molecular characterization of antibiotic resistance in enterococci recovered from seagulls (*Larus cachinnans*) representing an environmental health problem**

Hajer Radhouani, Gilberto Igrejas, Luís Pinto, Alexandre Gonçalves, Céline Coelho, Jorge Rodrigues and Patrícia Poeta\*

Antimicrobial resistance and the mechanisms implicated were studied in 54 enterococci recovered from 57 seagull fecal samples.

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2234

**Environmental monitoring of the role of phosphate compounds in enhancing immobilization and reducing bioavailability of lead in contaminated soils**

Jin Hee Park, Nanthi S. Bolan, Jae Woo Chung,\* Ravi Naidu and Mallavarapu Megharaj

Insoluble P compounds are effective in immobilizing Pb by reducing bioavailability while soluble P compounds increase P and Pb leaching.

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2243

**Tracing sources of coal combustion using stable sulfur isotope ratios in epilithic mosses and coals from China**

Hua-Yun Xiao,\* Cong-Guo Tang, Ren-Guo Zhu, Yan-Li Wang, Hong-Wei Xiao and Cong-Qiang Liu

In this paper, a mixing model was established using moss sulfur isotopes to calculate the ratios of coals of different origin.

2250

**Health risk assessment of organochlorine pesticides with emphasis on DDTs and HCHs in abandoned agricultural soils**

Yu Bon Man, Ka Lai Chow, Hong Sheng Wang, Ka Yan Lau, Xiao Lin Sun, Sheng Chun Wu, Kwai Chung Cheung, Shan Shan Chung and Ming Hung Wong\*

This paper provides important information on the fresh input of DDTs and their potential health impact after changing agricultural land use in Hong Kong.

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2260

**Spatial and temporal trends of selected trace elements in liver tissue from polar bears (*Ursus maritimus*) from Alaska, Canada and Greenland**

Heli Routti, Robert J. Letcher,\* Erik W. Born, Marsha Branigan, Rune Dietz, Thomas J. Evans, Aaron T. Fisk, Elizabeth Peacock and Christian Sonne

Spatial trends and comparative changes in time of selected trace elements were studied in liver tissue from polar bears from ten different subpopulation locations in Alaska, Canadian Arctic and East Greenland.

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2268

**A dual channel gas chromatograph for atmospheric analysis of volatile organic compounds including oxygenated and monoterpene compounds**

James R. Hopkins,\* Charlotte E. Jones and Alastair C. Lewis

Recent modifications to a dual channel gas chromatograph have broadened the scope of the instrument to incorporate measurements of selected monoterpenes in the atmosphere.

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2277

**A survey on the temporal and spatial distribution of perchlorate in the Potomac River**

Christopher A. Impellitteri, Jennie P. Saxe,\* Ellen C. Schmitt and K. R. Young

Research on perchlorate in drinking water treatment plants along the Potomac River, USA. Novel analytical methods reveal the distribution of perchlorate.

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2284

**Multi-residue screening of prioritised human pharmaceuticals, illicit drugs and bactericides in sediments and sludge**

Katherine H. Langford, Malcolm Reid and Kevin V. Thomas\*

A robust multi-residue method was developed for the analysis of a selection of pharmaceutical compounds, illicit drugs and personal care product bactericides in sediments and sludges.

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2292

**Behaviors of dissolved antimony in the Yangtze River Estuary and its adjacent waters**

Xiao-Dan Wu, Jin-Ming Song,\* Xue-Gang Li, Hua-Mao Yuan and Ning Li

With antimony being listed as a priority pollutant by the US Environmental Protection Agency and the German Research Community, further investigation on its environment behavior in seawaters is becoming a necessity.

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2304

**Analysis of the key intermediates of RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine) in groundwater: occurrence, stability and preservation**

Louise Paquet, Fanny Monteil-Rivera, Paul B. Hatzinger, Mark E. Fuller and Jalal Hawari\*

Groundwater samples collected from US military sites and stabilized using appropriate preservation methods showed the presence of RDX and key transformation products.

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2312

**Occurrence and exposure assessment of perchlorate, iodide and nitrate ions from dairy milk and water in Japan and Sri Lanka**

Keerthi S. Guruge,\* Qian Wu and Kurunthachalam Kannan\*

Infants and children demonstrated the highest estimated perchlorate, iodide and nitrate-N intake from milk and water in Japan and Sri Lanka.

2321

**Climate change drives warming in the Hudson River Estuary, New York (USA)**

David A. Seekell\* and Michael L. Pace

The Hudson River is warming despite the mitigating effects of increased freshwater discharge.

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2328

**Occurrence of orthophosphate monoesters in lake sediments: significance of *myo*- and *scyllo*-inositol hexakisphosphate**

Charlotte Jørgensen,\* Henning S. Jensen,  
Frede Ø. Andersen, Sara Egemose and Kasper Reitzel

Knowledge on occurrence and recalcitrance of organic phosphorus compounds in sediments is necessary to improve the understanding of their ecological function in lakes.