BIBLIOGRAPHY

Abrahams, P. W. (1987) *Laboratory Technical Leaflet No. 35: Extraction of trace metals using nitric acid and digestion block*. Institute of Geography and Earth Sciences, University of Wales, Aberystwyth.

Abrahams, P. W. and Steigmajer, J. (2003) Soil ingestion by sheep grazing the metal enriched floodplain soils of mid-Wales. *Environmental Geochemistry and Health* **25,** 17-24.

Allan, R. J. (1988) Mining activities as sources of metals and metalloids to the hydrosphere. [In] Strigel, G. (Ed.) *Metals and metalloids in the hydrosphere: impact through mining and industry, and prevention technology.* Proceedings of an IHP workshop, Bochum, Federal Republic of Germany, 21-25th September 1987. UNESCO, Paris, 45-67.

Allan, R. J. (1995) The impact of mining activities on the terrestrial and aquatic environment with emphasis on mitigation and remedial measures. [In] Salomons, W., Förstner, U. and Mader, P. (Eds.) *Heavy metals: problems and solutions.* Springer-Verlag, Berlin, 119-140.

Allan, R. J. (1997) Introduction: Mining and metals in the environment. *Journal of Geochemical Exploration* **58,** 95-100.

Allcroft, R. and Blaxter, K. L. (1950) Lead as a nutritional hazard to farm livestock. V. The toxicity of lead to cattle and sheep and an evaluation of the lead hazard under farm conditions. *Journal of Comparative Pathology and Therapeutics* **60,** 209-218.

Allen, S. E. (Ed.) (1989) *Chemical Analysis of Ecological Materials.* (Second ed.) Blackwell Scientific Publications, Oxford. 368pp.

Alloway, B. J. (Ed.) (1995) *Heavy metals in soils.* (Second ed.) Blaikie and Sons, London. 368pp.

Alloway, B. J. and Davies, B. E. (1971) Trace metal content of soils affected by base metal mining in Wales. *Geoderma* **5,** 197-208.

Asselman, N. E. M. and Middelkoop, H. (1995) Floodplain processes: quantities, patterns and processes. *Earth Surface Processes and Landforms* **20,** 481-499.

Axtmann, E. V. and Luoma, S. N. (1991) Large-scale distribution of metal contamination in the fine-grained sediments of the Clark Fork River, Montana, U.S.A. *Applied Geochemistry* **6,** 75-88.

Bartley, R. and Rutherfurd, I. (2001) Ringarooma River. [In] Manitani, T., Brierley, G. J., Trustrum, N. A. and Page, M. (Eds.) *Source-to-Sink Sedimentary Cascades in Pacific Rim Geo-Systems.* Ministry of Land, Infrastructure and Transport, Nagano, Japan, 132-139.

Basta, N. T. and Tabatabai, M. A. (1992) Effect of cropping systems on adsorption of metals by soils: III. Competitive adsorption. *Soil Science* **153,** 331-337.

Bell, S. (1997) *Ball and Bell on Environmental Law: The law and policy relating to the protection of the environment.* (Fourth ed.) Blackstone Press, London. 570pp.

Benjamin, M. M., Hayes, K. J. and Leckie, J. O. (1982) Removal of toxic metals from power-generation waste streams by adsorption and co-precipitation. *Journal - Water Pollution Control Federation* **54,** 1472-1481.

Benvenuti, M., Mascaro, I., Lattanzi, P., Parrini, P. and Tanelli, G. (1997) Mine waste dumps and heavy metal pollution in abandoned mining district of Boccheggiano (Southern Tuscany, Italy). *Environmental Geology* **30,** 238-243.

Berndtsson, R. (1990) Transport and sedimentation of pollutants in a river reach: a chemical mass balance approach. *Water Resources Research* **26,** 1549-1558.

Bird, G., Brewer, P. A., Macklin, M. G., Balteanu, D., Driga, B., Serban, M. and Zaharia, S. (2003) The soild state partitioning of contaminant metals and As in river channel sediments of the mining affected Tisa drainage basin, northwestern Romania and eastern Hungary. *Applied Geochemistry* **18,** 1583-1595.

Bird, S. C. (1987) The effect of hydrological factors on trace metal contamination in the River Tawe, South Wales. *Environmental Pollution* **45,** 87-124.

Blackham, A., Davies, C. and Flenley, J. R. (1981) Evidence for Late Devensian landslipping and Late Flandrian forest regeneration at Gormire Lake, North Yorkshire. [In] Neale, J. and Flenley, J. R. (Eds.) *The Quaternary in Britain.* Pergamon Press, Oxford, 184-193.

Blake, W. H., Walsh, R. P. D., Barnsley, M. J., Palmer, G., Dyrynda, P. and James, J. G. (2003) Heavy metal concentrations during storm events in a rehabilitated industrialized catchment. *Hydrological Processes* **17,** 1923-1939.

Boult, S., Collins, D. S., White, K. N. and Curtis, C. D. (1994) Metal transport in a stream polluted by acid mine drainage - the Afon Goch, Anglesey, UK. *Environmental Pollution* **84,** 279-284.

Bowen, H. J. M. (1979) *Environmental Chemistry of the Elements.* Academic Press, New York. 333pp.

Bradley, L. (1862) *An inquiry into the deposition of lead ore in the mineral veins of Swaledale, Yorkshire.* E. Stanford, London. 40pp.

Bradley, S. B. (1982) Sediment quality related to discharge in a mineralized region of Wales. [In] Walling, D. E. (Ed.) *Recent developments in the explanation and prediction of erosion and sediment yield.* IAHS Special Publication 137. IAHS Press, Wallingford, 341-350.

Bradley, S. B. (1984) Flood effects on the transport of heavy metals. *International Journal of Environmental Studies* **22,** 225-230.

Bradley, S. B. (1988) Sediment-water interactions; the physical transport of heavy metals in the fluvial system. [In] Strigel, G. (Ed.) *Metals and metalloids in the hydrosphere: impact through mining and industry, and prevention technology.* Proceedings of an IHP workshop, Bochum, Federal Republic of Germany, 21-25th September 1987. UNESCO, Paris, 111-134.

Bradley, S. B. and Cox, J. J. (1986) Heavy metals in the Hamps and Manifold valleys, north Staffordshire, UK: distribution in floodplain soils. *Science of the Total Environment* **50,** 103-128.

Bradley, S. B. and Cox, J. J. (1987) Heavy metals in the Hamps and Manifold valleys, north Staffordshire, UK: partitioning of metals in floodplain soils. *Science of the Total Environment* **65,** 135-153.

Bradley, S. B. and Cox, J. J. (1990) The significance of the floodplain to the cycling of metals in the River Derwent catchment, UK. *Science of the Total Environment* **97-8,** 441-454.

Bradley, S. B. and Lewin, J. (1982) Transport of heavy metals on suspended sediments under high flow conditions in a mineralised region of Wales. *Environmental Pollution (Series B)* **4,** 257-267.

Brandvold, L. A., McLemore, V. T., O'Connor, C. and Brandvold, D. K. (1995) Distribution and partitioning of copper, lead and zinc in stream sediments above and below an abandoned mining and milling area near Pecos, New Mexico, USA. *Analyst* **120,** 1485-1495.

Brewer, P.A., Dennis, I.A. and Macklin, M.G. (2005) The use of geomorphological mapping and modelling for identifying land affected by metal contamination on river floodplains. DEFRA Research and Development Report SP 0525, 58pp.

Brewer, P. A. and Taylor, M. P. (1997) The spatial distribution of heavy metal contaminated sediment across terraced floodplains. *Catena* **30,** 229-249.

British Geological Survey (1992) *Regional geochemistry of the Lake District and adjacent areas.* British Geological Survey, Keyworth, Nottingham. 98pp.

British Geological Survey (1996) *Regional geochemistry of north-east England.* British Geological Survey, Keyworth, Nottingham. 100pp.

Carter, J. H. (1998) *Heavy metal contamination of alluvial sediments in the middle reaches of the River Swale, North Yorkshire*. Unpublished M.Sc. dissertation, University of Leeds. 117pp.

Chao, T. T. and Sanzolone, R. F. (1992) Decomposition techniques. *Journal of Geochemical Exploration* **44,** 65-106.

Chen, Z.-S., Lee, G.-J. and Liu, J.-C. (2001) Chemical remediation techniques for the soils contaminated with lead in Taiwan. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 93-105.

Chester, R. (1988) The storage of heavy metals in aquatic sediments. [In] Strigel, G. (Ed.) *Metals and metalloids in the hydrosphere: impact through mining and industry, and prevention technology.* Proceedings of an IHP workshop, Bochum, Federal Republic of Germany, 21-25th September 1987. UNESCO, Paris, 81-110.

Ciszewski, D. (2001) Flood-related changes in heavy metal concentrations within sediments of the Biała Przemsza River. *Geomorphology* **40,** 205-218.

Clegg, F. G. & Rylands, J. M. (1966) Osteoporosis and hydronephrosis of young lambs following the ingestion of lead. *Journal of Comparative Pathology,* **76,** 15-22.

Collingwood, R. G. and Myers, J. N. L. (1937) *Roman Britain and the English Settlements.* (Second ed.) Clarendon Press, Oxford. 515pp.

Collinson, J. D. (1996) Alluvial sediments. [In] Reading, H. G. (Ed.) *Sedimentary Environments: Processes, Facies and Stratigraphy.* (Third ed.) Blackwell Science, Oxford, 37-82.

Coulthard, T. J. and Macklin, M. G. (2003) Modelling long-term contamination in river systems from historical metal mining. *Geology* **31,** 451-454.

Daly, R. A., Manger, G. E. and Clark, S. P., Jr. (1966) Density of rocks. [In] Clark, S. P., Jr. (Ed.) *Handbook of Physical Constants.* (Revised ed.), Memoir 97. Geological Society of America, New York, 19-26.

Davies, B. E. (1980a) Base metal mining and heavy metal contamination of agricultural land in England and Wales. [In] MAFF/ADAS (Ed.) *Inorganic pollution and agriculture.* MAFF Reference Book 326. HMSO, London, 142-156.

Davies, B. E. (1980b) Trace element pollution. [In] Davies, B. E. (Ed.) *Applied Soil Trace Elements.* John Wiley and Sons, Chichester, 287-351.

Davies, B. E. (1983a) A graphical estimation of the normal lead content of some British soils. *Geoderma* **29,** 67-75.

Davies, B. E. (1983b) Heavy Metal Contamination from Base Metal Mining and Smelting: Implications for Man and His Environment. [In] Thornton, I. (Ed.) *Applied Environmental Geochemistry.* Academic Press, London, 425-462.

Davies, B. E. and Lewin, J. (1974) Chronosequences in alluvial soils with special reference to historic lead pollution in Cardiganshire, Wales. *Environmental Pollution* **6,** 49-57.

Davies, B. E. and Wixson, B. G. (1985) Trace elements in surface soils from the mineralised area of Madison county, Missouri, USA. *Journal of Soil Science* **36,** 551-570.

Davis, A., Helgen, S. O. and McNulty, T. P. (2001) Discriminating between copper and silver mill tailings in Silver Bow Creek overbank deposits, Butte, Montana, U.S.A. *Environmental Forensics* **2,** 249-259.

De Vos, W., Ebbing, J., Hindel, R., Schalich, J., Swennen, R. and Van Keer, I. (1996) Geochemical mapping based on overbank sediments in the heavily industrialised border area of Belgium, Germany and the Netherlands. *Journal of Geochemical Exploration* **56,** 91-104.

DEFRA (2002) *Note on the withdrawal of ICRCL trigger values*. DEFRA Contaminated Land Branch, London. 4pp.

DEFRA and Environment Agency (2002a) *Assessment of risks to human health from land contamination: an overview of the development of soil guideline values and related research.* R&D Publication CLR 7. Environment Agency, Bristol. 32pp.

DEFRA and Environment Agency (2002b) *Contaminants in soil: collation of toxicological data and intake values for humans.* R&D Publication CLR 9. Environment Agency, Bristol. 42pp.

DEFRA and Environment Agency (2002c) *The Contaminated Land Exposure Assessment (CLEA) model: technical basis and algorithms.* R&D Publication CLR 10. Environment Agency, Bristol. 138pp.

Dennis, I. A., Macklin, M. G., Coulthard, T. J. and Brewer, P. A. (2003) The impact of the October/November 2000 floods on contaminant metal dispersal in the River Swale catchment, North Yorkshire, UK. *Hydrological Processes* **17,** 1641-1657.

Dossis, P. and Warren, L. J. (1980) Distribution of heavy metals between the minerals and organic debris in a contaminated marine sediment. [In] Baker, R. (Ed.) *Contaminants and sediments.* Vol. 1. Ann Arbor Science Publishers, Ann Arbor, Michigan, 119-142.

Duchart, P., Calvert, S. and Price, N. (1973) Distribution of trace metals in the pore waters of shallow water marine sediments. *Limnology and Oceanography* **18,** 605-610.

Duffus, J. H. (2002) "Heavy metals" - A meaningless term? (IUPAC technical report). *Pure and Applied Chemistry* **74,** 793-807.

Dunham, K. C. (1959) Epigenic mineralization in Yorkshire. *Proceedings of the Yorkshire Geological Society* **32,** 1-30.

Dunham, K. C. (1988) Pennine mineralisation at depth. *Proceedings of the Yorkshire Geological Society* **47,** 1-12.

Dunham, K. C. and Wilson, A. A. (1985) *Geology of the Northern Pennine Orefield: Volume 2, Stainmore to Craven.* HMSO, London. 247pp.

Duxbury, R. M. C. and Morton, S. G. C. (Eds.) (1998) *Blackstone's Statutes on Environmental Law.* (Second ed.) Blackstone Press, London. 463pp.

Environment Agency (1997) *Local Environment Agency Plan: Swale, Ure and Ouse consultation report*. Environment Agency, Bristol.

Evans, D. and Davies, B. E. (1994) The influence of channel morphology on the chemical partitioning of Pb and Zn in contaminated river sediments. *Applied Geochemistry* **9,** 45-52.

Fieldhouse, R. and Jennings, B. (1978) *A history of Richmond and Swaledale.* Phillimore and Co., Chichester. 520pp.

Fishman, M. J. and Friedman, L. C. (Eds.) (1989) *Methods for determination of inorganic substances in water and fluvial sediments.* (Third ed.) Techniques of Water-Resources Investigations of the United States Geological Survey, Book 5, Chapter A1. United States Government Printing Office, Washington. 545pp.

Fleischhauer, H. L. and Korte, N. (1990) Formulation of cleanup standards for trace elements with probability plots. *Environmental Management* **14,** 95-105.

Förstner, U. (1987) Sediment-associated contaminants - and overview of scientific bases for developing remedial options. *Hydrobiologia* **149,** 221-246.

Förstner, U. and Kersten, U. (1988) Sediment-water interactions: chemical mobilisation. [In] Strigel, G. (Ed.) *Metals and metalloids in the hydrosphere: impact through mining and industry, and prevention technology.* Proceedings of an IHP workshop, Bochum, Federal Republic of Germany, 21-25th September 1987. UNESCO, Paris, 135-164.

Förstner, U. and Wittmann, G. T. W. (1979) *Metal Pollution in the Aquatic Environment.* Springer-Verlag, Berlin. 486pp.

Foster, I. D. L. and Charlesworth, S. M. (1996) Heavy metals in the hydrological cycle: trends and explanation. *Hydrological Processes* **10,** 227-261.

Foster, I. D. L. and Lees, J. A. (1999) Changing headwater suspended sediment yields in the LOIS catchments over the last century: a paleolimnological approach. *Hydrological Processes* **13,** 1137-1153.

Gamesby, R. (1997) *Heavy metal contamination of a fluvial system by historic metal mining activity: the River Swale, North Yorkshire, England.* Unpublished B.Sc. dissertation, University of Leeds. 63pp.

Gaunt, G. D. (1981) Quaternary history of the southern part of the Vale of York. [In] Neale, J. and Flenley, J. R. (Eds.) *The Quaternary in Britain.* Pergamon Press, Oxford, 82-97.

Gaunt, G. D., Jarvis, R. A. and Matthews, B. (1971) The Late Weichselian sequence in the Vale of York. *Proceedings of the Yorkshire Geological Society* **38,** 281-284.

Gee, C., Ramsey, M. H., Maskall, J. and Thornton, I. (1997) Mineralogy and weathering processes in historical smelting slags and their effect on the mobilisation of lead. *Journal of Geochemical Exploration* **58,** 249-257.

Gibbs, R. J. (1973) Mechanisms of trace metal transport in rivers. *Science* **180,** 71-73.

Gibbs, R. J. (1977) Transport phases of transition metals in the Amazon and Yukon Rivers. *Geological Society of America Bulletin* **88,** 829-843.

Gilbert, G. K. (1917) Hydraulic-mining debris in the Sierra Nevada. *USGS Professional Paper* **105,** 154pp.

Gill, M. C. (2001) *Swaledale: its mines and smelt mills.* Landmark Publishing Ltd., Ashbourne. 174pp.

Gill, R. (1997) Which method should I use? [In] Gill, R. (Ed.) *Modern Analytical Geochemistry: An introduction to quantitative chemical analysis for earth, environmental and materials scientists.* Longman, Harlow, 206-214.

Gill, R. and Ramsey, M. H. (1997) What a geochemical analysis means. [In] Gill, R. (Ed.) *Modern Analytical Geochemistry: An introduction to quantitative chemical analysis for earth, environmental and materials scientists.* Longman, Harlow, 1-11.

Goldberg, E. and Arrhenius, G. (1958) Chemistry of Pacific pelagic sediments. *Geochimica et Cosmochimica Acta* **13,** 153-212.

Graf, W. L. (1979) Mining and Channel Response. *Annals of the Association of American Geographers* **69,** 262-275.

Graf, W. L. (1985) Mercury transport in stream sediments of the Colorado plateau. *Annals of the Association of American Geographers* **75,** 552-565.

Graf, W. L. (1990) Fluvial dynamics on thorium-230 in the Church Rock Event, Puerco River, New Mexico. *Annals of the Association of American Geographers* **80,** 327-342.

Graf, W. L., Clark, S. L., Kammerer, M. T., Lehman, T., Randall, K. and Schroeder, T. (1991) Geomorphology of heavy metals in the sediments of Queen Creek, Arizona, USA. *Catena* **18,** 567-582.

Graves, W. and Eliab, P. (1977) *Sediment study: Alternative delta water facilities - Peripheral canal plan.* California Department of Water Resources, Central District, Sacramento, California.

Grimshaw, D. L., Lewin, J. and Fuge, R. (1976) Seasonal and short-term variations in the concentration and supply of dissolved zinc to polluted aquatic environments. *Environmental Pollution* **11,** 1-7.

Grimshaw, H. M. (1989) Analysis of Soils. [In] Allen, S. E. (Ed.) *Chemical Analysis of Ecological Materials.* (Second ed.) Blackwell Scientific Publications, Oxford, 7-45.

Grove, J. R. and Sedgwick, C. M. (1998) Downstream spatial and temporal remobilisation of heavy metal contaminated sediments in the River Swale, England. [In] IRTCES (Ed.) *Proceedings of the International Symposium on Comprehensive Watershed Management.* 7-10 September 1998. Patent Documentation Publishing House, Beijing, 505-512.

Hall, G. E. M. (1992) Inductively coupled plasma mass spectrometry in geoanalysis. *Journal of Geochemical Exploration* **44,** 201-249.

Harrison, R. M. and Laxen, D. P. H. (1977) A comparative study of methods for the analysis of total lead in soils. *Water, Air, and Soil Pollution* **8,** 387-392.

Hatch, R. C. (1977) Veterinary Toxicology. [In] Meyer Jones, L., Booth, N. H. and McDonald, L. E. (Eds.) *Veterinary Pharmacology and Therapeutics.* (Fourth ed.) Iowa State University Press, Ames, 1121-1296.

Haworth, C. J. (1906) *The Statute Law Relating to Rivers Pollution.* (Second ed.) Stevens and Sons, London. 191pp.

Helgen, S. O. and Moore, J. N. (1996) Natural background determination and impact quantification in trace metal-contaminated river sediments. *Environmental Science and Technology* **30,** 129-135.

Hodson, M. E. (2004) Heavy metals - geochemical bogey men? *Environmental Pollution* **129,** 341-343.

Horowitz, A. J. (1991) *A Primer on Sediment-Trace Element Chemistry.* (Second ed.) Lewis Publishers, Chelsea, Michigan. 136pp.

Horowitz, A. J. (1995) *The use of suspended sediment and associated trace elements in water quality studies.* IAHS Special Publication No. 4. IAHS Press, Wallingford. 58pp.

Horowitz, A. J. and Elrick, K. A. (1987) The relation of stream sediment surface area, grain size, and composition to trace element chemistry. *Applied Geochemistry* **2,** 437-451.

Howard, A. J. and Macklin, M. G. (1998) Introduction to the eastern Yorkshire Dales. [In] Howard, A. J. and Macklin, M. G. (Eds.) *The Quaternary History of the Eastern Yorkshire Dales: Field Guide. The Holocene Alluvial Record.* Quaternary Research Association, London, 1-4.

Howard, A. J., Macklin, M. G., Black, S. and Hudson-Edwards, K. A. (1999) Holocene river development and environmental change in Upper Wharfedale, Yorkshire Dales, England. *Journal of Quaternary Science* **15,** 239-252.

Howard, M. and Holcombe, J. A. (2001) Polyamino acid chelation for metal remediation. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 243-259.

Hren, M. T., Chamberlain, C. P. and Magilligan, F. J. (2001) A combined flood surface and geochemical analysis of metal fluxes in a historically mined region: a case study from the New World Mining District, Montana. *Environmental Geology* **40,** 1334-1346.

Hudson-Edwards, K. A. (2003) Sources, mineralogy, chemistry and fate of heavy metal-bearing particles in mining-affected river systems. *Mineralogical Magazine* **67,** 205-217.

Hudson-Edwards, K. A., Macklin, M. G., Curtis, C. D. and Vaughan, D. J. (1996) Processes of formation and distribution of Pb-, Zn-, Cd- and Cu-bearing minerals in the Tyne Basin, Northeast England: implications for metal contaminated river systems. *Environmental Science and Technology* **30,** 72-80.

Hudson-Edwards, K. A., Macklin, M. G., Curtis, C. D. and Vaughan, D. J. (1998) Chemical remobilization of contaminant metals within floodplain sediments in an incising river system: implications for dating and chemostratigraphy. *Earth Surface Processes and Landforms* **23,** 671-684.

Hudson-Edwards, K. A., Macklin, M. G., Finlayson, R. and Passmore, D. G. (1999a) Mediaeval lead pollution in the River Ouse at York, England. *Journal of Archaeological Science* **26,** 809-819.

Hudson-Edwards, K. A., Macklin, M. G., Miller, J. R. and Lechler, P. J. (2001) Sources, distribution and storage of heavy metals in the Río Pilcomayo, Bolivia. *Journal of Geochemical Exploration* **72,** 229-250.

Hudson-Edwards, K. A., Macklin, M. G. and Taylor, M. P. (1999b) 2000 years of sediment-borne heavy metal storage in the Yorkshire Ouse basin, NE England, UK. *Hydrological Processes* **13,** 1087-1102.

Hunt, R. (1848a) Produce of lead ore and lead in the UK for the years 1845 and 1846. *Memoirs of the Geological Survey of Great Britain* **ii,** 703-706.

Hunt, R. (1848b) Produce of lead ore and lead in the UK for the year 1847. *Memoirs of the Geological Survey of Great Britain* **ii,** 707-710.

ICRCL (1990) *Notes on the restoration and aftercare of metalliferous mining sites for pasture and grazing. Guidance Note 70/90*. Department of the Environment, London. 15pp.

Ineson, P. R. and Al-Badri, A. S. (1980) Hydrogeochemically anomalous areas in the Askrigg Block of the Northern Pennine Orefield. *Proceedings of the Yorkshire Geological Society* **43,** 17-27.

Ineson, P. R. and Al-Badri, A. S. (1981) A hydrogeochemical and stream sediment survey of the Askrigg Block in the Northern Pennine Orefield. *Proceedings of the Yorkshire Geological Society* **43,** 357-376.

Ixer, R. A. and Vaughan, D. J. (1993) Lead-zinc-fluorite-baryte deposits of the Pennines, North Wales and the Mendips. [In] Pattrick, R. A. D. and Polya, D. A. (Eds.) *Mineralization in the British Isles.* Chapman and Hall, London, 355-418.

Jaeggi, M. N. R. (1987) Interaction of bed load transport with bars. [In] Thorne, C. R., Bathurst, J. C. and Hey, R. D. (Eds.) *Sediment Transport in Gravel-Bed Rivers.* John Wiley and Sons, Chichester, 829-841.

Jain, C. K. and Ali, I. (2000) Adsorption of cadmium on riverine sediments: Quantitative treatment of large particles. *Hydrological Processes* **14,** 261-270.

James, L. A. (1989) Sustained storage and transport of hydraulic gold mining sediment in the Bear River, California. *Annals of the Association of American Geographers* **79,** 570-592.

James, L. A. (1991) Incision and morphologic evolution of an alluvial channel recovering from hydraulic mining sediment. *Geological Society of America Bulletin* **103,** 723-736.

James, L. A. (1999) Time and the persistence of alluvium: River engineering, fluvial geomorphology, and mining sediment in California. *Geomorphology* **31,** 265-290.

James, L. A. (2004) Tailings fans and valley-spur cutoffs created by hydraulic mining. *Earth Surface Processes and Landforms* **29,** 869-882.

Jarvis, I. and Jarvis, K. E. (1992) Plasma spectrometry in the earth sciences: techniques, applications and future trends. *Chemical Geology* **95,** 1-33.

Jarvis, K. E. (1997) Inductively coupled plasma-mass spectrometry. [In] Gill, R. (Ed.) *Modern Analytical Geochemistry: An introduction to quantitative chemical analysis for earth, environmental and materials scientists.* Longman, Harlow, 171-187.

Jarvis, P. J. (1983) *Heavy metal pollution: an annotated bibliography 1976-1980.* Geobooks, Norwich. 420pp.

Jenne, E. (1976) Trace element sorption by sediments and soils - sites and processes. [In] Chappell, W. and Peterson, K. (Eds.) *Symposium on molybdenum.* Vol. 2. Marcel-Dekker, New York, 425-553.

Jennings, B. (1963) The Industrial Revolution in Swaledale lead mining. *Proceedings of the British Speleological Association* **1,** 15-24.

Jones, B. and Bowser, C. (1978) The mineralogy and related chemistry of lake sediments. [In] Lerman, A. (Ed.) *Lakes: chemistry, geology, physics.* Springer-Verlag, New York, 179-235.

Kabata-Pendias, A. and Pendias, H. (2001) *Trace Elements in Soils and Plants.* (Third ed.) CRC Press, Boca Raton. 413pp.

Kane, J. S. (1992) Reference samples for use in analytical geochemistry: their availability, preparation, and appropriate use. *Journal of Geochemical Exploration* **44,** 37-63.

Keller, C., Kayser, A., Keller, A. and Schulin, R. (2001) Heavy-metal uptake by agricultural crops from sewage-sludge treated soils of the Upper Swiss Rhine Valley and the effect of time. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 273-291.

Kelman, I. (2001) The autumn 2000 floods in England and flood management. *Weather* **56,** 346-360.

Knighton, A. D. (1989) River adjustment to changes in sediment load: the effects of tin mining on the Ringarooma River, Tasmania, 1875-1984. *Earth Surface Processes and Landforms* **14,** 333-359.

Knighton, A. D. (1991) Channel bed adjustment along mine-affected rivers of northeast Tasmania. *Geomorphology* **4,** 205-219.

Knox, A. S., Seaman, J. C., Mench, M. J. and Vangronsveld, J. (2001) Remediation of metal- and radionuclides-contaminated soils by *in situ* stabilization techniques. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 21-60.

Knox, J. C. (1987) Historical valley floor sedimentation in the Upper Mississippi Valley. *Annals of the Association of American Geographers* **77,** 224-244.

Konsten, C. J. M., Meulen-Smidt, G. R. B., Stigliani, W. M., Salomons, W. and Eijsackers, H. (1993) Summary of the workshop on delayed effects of chemicals in soils and sediments (Chemical Time Bombs) with emphasis on the Scandinavian region. *Applied Geochemistry* **Supplementary Issue 2,** 295-299.

Kuenen, P. (1965) Geological conditions of sedimentation. [In] Riley, J. and Skirrow, G. (Eds.) *Chemical oceanography.* Vol. 2. Academic Press, New York, 1-22.

Lambert, C. P. and Walling, D. E. (1987) Floodplain sedimentation: a preliminary investigation of contemporary deposition within the lower reaches of the River Culm, Devon, UK. *Geografiska Annaler* **69 A,** 393-404.

Langedal, M. (1997) Dispersion of tailings in the Knabeåna-Kvina drainage basin, Norway, 2: mobility of Cu and Mo in tailings-derived fluvial sediments. *Journal of Geochemical Exploration* **58,** 173-183.

Laperche, V. (2001) Immobilization of lead by *in situ* formation of lead phosphates in soil. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 61-76.

Lawler, D. M., Grove, J. R., Couperthwaite, J. S. and Leeks, G. J. L. (1999) Downstream change in river bank erosion rates in the Swale-Ouse system, northern England. *Hydrological Processes* **13,** 977-992.

Lecce, S. A. and Pavlowsky, R. T. (2001) Use of mining-contaminated sediment tracers to investigate the timing and rates of historical flood plain sedimentation. *Geomorphology* **38,** 85-108.

Leenaers, H. (1989) The transport of heavy metals during flood events in the polluted River Geul (The Netherlands). *Hydrological Processes* **3,** 325-338.

Leenaers, H., Schouten, C. J. and Rang, M. C. (1988) Variability of the metal content of flood deposits. *Environmental Geology and Water Science* **11,** 95-106.

Leigh, D. S. (1997) Mercury-tainted overbank sediment from past gold mining in North Georgia, USA. *Environmental Geology* **30,** 244-251.

Lepeltier, C. (1969) A simplified statistical treatment of geochemical data by graphical representation. *Economic Geology* **64,** 538-550.

Lewin, J. (1983) Changes of channel patterns and floodplains. [In] Gregory, K. J. (Ed.) *Background to Palaeohydrology.* John WIley and Sons, Chichester, 303-319.

Lewin, J., Bradley, S. B. and Macklin, M. G. (1983) Historical valley alluviation in mid-Wales. *Geological Journal* **19,** 331-350.

Lewin, J., Davies, B. E. and Wolfenden, P. J. (1977) Interactions between channel change and historic mining sediments. [In] Gregory, K. J. (Ed.) *River Channel Changes.* John Wiley and Sons, Chichester, 353-367.

Lewin, J. and Macklin, M. G. (1987) Metal mining and floodplain sedimentation in Britain. [In] Gardiner, V. (Ed.) *International Geomorphology 1986: Proceedings of the First International Conference on Geomorphology.* Part 1. John Wiley and Sons, Chichester, 1009-1027.

Liu, J., Tang, H. X., Lin, Y. H. and Mao, M. Z. (1995) Assessment of metal contaminants dispersed in the aquatic environment. [In] Allen, H. E., Huang, C. P., Bailey, G. W. and Bowers, A. R. (Eds.) *Metal Speciation and Contamination of Soil.* Lewis Publishers, Boca Raton, 311-330.

Longfield, S. A. and Macklin, M. G. (1999) The influence of recent environmental change on flooding and sediment fluxes in the Yorkshire Ouse basin. *Hydrological Processes* **13,** 1051-1066.

Macklin, M. G. (1985) Flood-plain sedimentation in the upper Axe Valley, Mendip, England. *Transactions of the Institute of British Geographers* **New Series 10,** 235-244.

Macklin, M. G. (1988) *A fluvial geomorphological based evaluation of contamination of the Tyne basin, north-east England by sediment-borne heavy metals.* Unpublished report to the Natural Environment Research Council. 29pp.

Macklin, M. G. (1992) Metal pollution of soils and sediments: a geographical perspective. [In] Newson, M. D. (Ed.) *Managing the human impact on the natural environment: patterns and processes.* Belhaven Press, London, 174-195.

Macklin, M. G. (1996) Fluxes and storage of sediment-associated heavy metals in floodplain systems: assessment and river basin management issues at a time of rapid environmental change. [In] Anderson, M. G., Walling, D. E. and Bates, P. D. (Eds.) *Floodplain Processes.* John Wiley and Sons, Chichester, 441-460.

Macklin, M. G. (1997) Fluvial geomorphology of north-east England. [In] Gregory, K. J. (Ed.) *Fluvial Geomorphology of Great Britain.* Joint Nature Conservation Committee, Chapman and Hall, London, 201-238.

Macklin, M. G., Brewer, P. A., Balteanu, D., Coulthard, T. J., Driga, B., Howard, A. J. and Zaharia, S. (2003) The long term fate and environmental significance of contaminant metals released by the January and March 2000 mining tailings dam failures in Maramures County, upper Tisa Basin, Romania. *Applied Geochemistry* **18,** 241-257.

Macklin, M. G. and Dowsett, R. B. (1989) The chemical and physical speciation of trace metals in fine grained overbank flood sediments in the Tyne Basin, north-east England. *Catena* **16,** 135-151.

Macklin, M. G., Hudson-Edwards, K. A. and Dawson, E. J. (1997) The significance of pollution from historic metal mining in the Pennine orefields on river sediment contaminant fluxes to the North Sea. *The Science of the Total Environment* **194/195,** 391-397.

Macklin, M. G. and Klimek, K. (1992) Dispersal, storage and transformation of metal-contaminated alluvium in the upper Vistula basin, southwest Poland. *Applied Geography* **12,** 7-30.

Macklin, M. G. and Lewin, J. (1989) Sediment transfer and transformation of an alluvial valley floor: the River South Tyne, Northumbria, U.K. *Earth Surface Processes and Landforms* **14,** 233-246.

Macklin, M. G., Ridgway, J., Passmore, D. G. and Rumsby, B. T. (1994) The use of overbank sediments for geochemical mapping and contamination assessment: results from selected English and Welsh floodplains. *Applied Geochemistry* **9,** 689-700.

Macklin, M. G., Rumsby, B. T. and Newson, M. D. (1992) Historical floods and vertical accretion of fine-grained alluvium in the Lower Tyne Valley, Northeast England. [In] Billi, P., Hey, R. D., Thorne, C. R. and Tacconi, P. (Eds.) *Dynamics of Gravel-bed Rivers.* John Wiley and Sons, Chichester, 573-589.

Macklin, M. G. and Smith, R. S. (1990) Historic riparian vegetation development and alluvial metallophyte plant communities in the Tyne basin, north-east England. [In] Thornes, J. B. (Ed.) *Vegetation and erosion: processes and environments.* John Wiley and Sons, Chichester, 239-256.

Macklin, M. G., Taylor, M. P., Hudson-Edwards, K. A. and Howard, A. J. (2000) Holocene environmental change in the Yorkshire Ouse basin and its influence on river dynamics and sediment fluxes on the coastal zone. [In] Shennan, I. and Andrews, J. (Eds.) *Holocene Land-Ocean Interaction and Environmental Change around the North Sea.* Special Publication 166. The Geological Society, London, 87-96.

MAFF (1986) *The Analysis of Agricultural Materials: A Manual of the Analytical Methods used by the Agricultural Development and Advisory Service.* (Third ed.) Reference Book 427. HMSO, London. 248pp.

MAFF (1998) *Code of Good Agricultural Practice for the Protection of Soil.* MAFF Publications, London. 66pp.

Mann, A. W. and Lintern, M. (1983) Heavy metal dispersion patterns from tailings dumps, Northampton District, Western Australia. *Environmental Pollution (Series B)* **6,** 33-49.

Mansikkaniemi, H. (1985) Sedimentation and water quality in the flood basin of the River Kyrönjoki in Finland. *Fennia* **163,** 155-194.

Marcus, W. A. (1987) Copper dispersion in ephemeral stream sediments. *Earth Surface Processes and Landforms* **12,** 217-228.

Marcus, W. A., Meyer, G. A. and Nimmo, D. R. (2001) Geomorphic control of persistent mine impacts in a Yellowstone Park stream and implications for the recovery of fluvial systems. *Geology* **29,** 355-358.

Marron, D. C. (1989) Physical and chemical characteristics of a metal-contaminated overbank deposit, west-central South Dakota, U.S.A. *Earth Surface Processes and Landforms* **14,** 419-432.

Marron, D. C. (1992) Floodplain storage of mine tailings in the Belle Fourche river system: a sediment budget approach. *Earth Surface Processes and Landforms* **17,** 675-685.

Martin, C. W. (2004) Heavy metal storage in near channel sediments of the Lahn River, Germany. *Geomorphology* **61,** 275-285.

Maskall, J., Whitehead, K., Gee, C. and Thornton, I. (1996) Long-term migration of metals at historical smelting sites. *Applied Geochemistry* **11,** 43-51.

Masse, R. and Maessen, F. J. M. J. (1981) Losses of silver, arsenic, cadmium, selenium and zinc traces from distilled water and artificial sea-water by sorption on various container suraces. *Analytica Chimica Acta* **127,** 181-193.

McGrath, S. P. and Loveland, P. J. (1992) *The Soil Geochemical Atlas of England and Wales.* Blackie Academic and Professional, London. 101pp.

Merefield, J. R. (1987) Heavy metals in the Teign Valley sediments: ten years after. *Proceedings of the Ussher Society* **6,** 529-535.

Merrett, S. P. (2001) *Historic flooding and valley floor development, Yorkshire Dales, Northern England*. Unpublished Ph.D. Thesis, University of Leeds. 220pp.

Merrett, S. P. and Macklin, M. G. (1998) Recent and historical flood events, Shaw Beck Gill, Yorkshire Dales. [In] Howard, A. J. and Macklin, M. G. (Eds.) *The Quaternary History of the Eastern Yorkshire Dales: Field Guide. The Holocene Alluvial Record.* Quaternary Research Association, London, 77-81.

Merrett, S. P. and Macklin, M. G. (1999) Historic river response to extreme flooding in the Yorkshire Dales, northern England. [In] Brown, A. G. and Quine, T. A. (Eds.) *Fluvial Processes and Environmental Change.* John Wiley and Sons Ltd., 345-360.

Merrington, G. and Alloway, B. J. (1994) The transfer and fate of Cd, Cu, Pb and Zn from two historic metalliferous mine sites in the U.K. *Applied Geochemistry* **9,** 677-687.

Middelkoop, H. (2000) Heavy-metal pollution of the river Rhine and Meuse floodplains in The Netherlands. *Netherlands Journal of Geosciences* **79,** 411-428.

Middelkoop, H. (2002) Reconstructing floodplain sedimentation rates from heavy metal profiles by inverse modelling. *Hydrological Processes* **16,** 47-64.

Middelkoop, H., Thonon, I. and Van der Perk, M. (2002) Effective discharge for heavy metal deposition on the lower River Rhine flood plains. [In] Dyer, F. J., Thoms, M. C. and Olley, J. M. (Eds.) *The Structure, Function and Management Implications of Fluvial Sedimentary Systems.* IAHS Publication no. 276. IAHS Press, Wallingford, 151-159.

Miller, J. R. (1997) The role of fluvial geomorphic processes in the dispersal of heavy metals from mine sites. *Journal of Geochemical Exploration* **58,** 101-118.

Miller, J. R., Barr, R., Grow, D., Lechler, P., Richardson, D., Waltman, K. and Warwick, J. (1999) Effects of the 1997 flood on the transport and storage of sediment and mercury within the Carson River valley, west-central Nevada. *Journal of Geology* **107,** 313-327.

Miller, J. R., Rowland, J., Lechler, P. J., Desilets, M. and Hsu, L. C. (1996) Dispersal of mercury-contaminated sediments by geomorphic processes, Sixmile Canyon, Nevada, USA: implications to site characterization and remediation of fluvial environments. *Water, Air, and Soil Pollution* **86,** 373-388.

Mills, C. F., Campbell, J. K., Bremner, I. and Quaterman, J. (1980) The influence of dietary composition on the toxicity of cadmium, copper, zinc and lead to animals. [In] MAFF/ADAS (Ed.) *Inorganic pollution and agriculture.* MAFF Reference Book 326. HMSO, London, 11-21.

Moody, J. A., Sullivan, J. F. and Taylor, H. E. (2000) Effects of the flood of 1993 on the chemical characteristics of bed sediments in the Upper Mississippi River. *Water, Air, and Soil Pollution* **117,** 329-351.

Moore, J. N., Brook, E. J. and Johns, C. (1989) Grain size partitioning of metals in contaminated, coarse-grained river floodplain sediment: Clark Fork River, Montana, U.S.A. *Environmental Geology and Water Science* **14,** 107-115.

Morrison, J. (1998) *Lead mining in the Yorkshire Dales.* Dalesman, Skipton. 142pp.

Moussavi-Harami, R., Mahboubi, A. and Khanehbad, M. (2004) Analysis of controls on downstream fining along three gravel-bed rivers in the Band-e-Golestan drainage basin NE Iran. *Geomorphology* **61,** 143-153.

Nagorski, S. A., Moore, J. N., McKinnon, T. E. and Smith, D. B. (2003) Geochemical response to variable streamflow conditions in contaminated and uncontaminated streams. *Water Resources Research* **39,** article 1044.

Neal, C., Jarvie, H. P. and Oguchi, T. (1999) Acid-available particulate trace metals associated with suspended sediment in the Humber rivers: a regional assessment. *Hydrological Processes* **13,** 1117-1136.

Neal, C. and Robson, A. J. (2000) A summary of river water quality data collected within the Land-Ocean Interaction Study: core data for eastern UK rivers draining to the North Sea. *Science of the Total Environment* **251,** 585-665.

Newson, M. D. and Macklin, M. G. (1990) The geomorphologically-effective flood and vertical instability in river channels - a feedback mechanism in the flood series for gravel-bed rivers. [In] White, W. R. (Ed.) *International Conference on River Flood Hydraulics.* John Wiley and Sons. Chichester, 123-140.

Nicholas, A. P., Ashworth, P. J., Kirkby, M. J., Macklin, M. G. and Murray, T. (1995) Sediment slugs: large-scale fluctuations in fluvial sediment transport rates and storage volumes. *Progress in Physical Geography* **19,** 500-519.

Nieboer, E. and Richardson, D. H. S. (1980) The replacement of the nondescript term 'heavy metals' by a biologically and chemically significant classification of metal ions. *Environmental Pollution (Series B)* **1,** 3-26.

Nriagu, J. O. (1979) Global inventory of natural and anthropogenic emissions of trace metals to the atmosphere. *Nature* **279,** 409-411.

Nriagu, J. O. (1989) A global assessment of natural sources of atmospheric trace metals. *Nature* **338,** 47-49.

Nriagu, J. O. (1990) Human influence on the global cycling of trace metals. *Palaeogeography, Palaeoclimatology, Palaeoecology (Global and Planetary Change Section)* **82,** 113-120.

Ottesen, R. T., Bogen, J., Bølviken, B. and Volden, T. (1989) Overbank sediment: a representative sample medium for regional geochemical mapping. *Journal of Geochemical Exploration* **32,** 257-277.

Owens, P. N., Walling, D. E., Carton, J., Meharg, A. A., Wright, J. and Leeks, G. J. L. (2001) Downstream changes in the transport and storage of sediment-associated contaminants (P, Cr and PCBs) in agricultural and industrialized drainage basins. *Science of the Total Environment* **266,** 177-186.

Owens, P. N., Walling, D. E. and Leeks, G. J. L. (1999) Use of floodplain sedment cores to investigate recent historical changes in overbank sedimentation rates and sediment sources in the catchment of the River Ouse, Yorkshire, UK. *Catena* **36,** 21-47.

Page, G. W. (1997) *Contaminated sites and environmental cleanup: International approaches to prevention, remediation and reuse.* Academic Press, San Diego. 212pp.

Parslow, G. R. (1974) Determination of background and threshold in exploration geochemistry. *Journal of Geochemical Exploration* **3,** 319-336.

Passmore, D. G. and Macklin, M. G. (1994) Provenance of fine-grained alluvium and late Holocene land-use change in the Tyne basin, northern England. *Geomorphology* **9,** 127-142.

Passow, H., Rothstein, A. and Clarkson, T. W. (1961) The general pharmacology of the heavy metals. *Pharmacology Review* **13,** 185-225.

Pestana, M. H. D., Formoso, M. L. L. and Teixeira, E. C. (1997) Heavy metals in stream sediments from copper and gold mining areas in southern Brazil. *Journal of Geochemical Exploration* **58,** 133-143.

Peters, R. W. and Shem, L. (1995) Treatment of soils contaminated with heavy metals. [In] Allen, H. E., Huang, C. P., Bailey, G. W. and Bowers, A. R. (Eds.) *Metal Speciation and Contamination of Soil.* Lewis Publishers, Boca Raton, 255-274.

Pounder, E. J. (1979) *Alluvial fans and river terraces: a study of their morphology and development in selected parts of the Swale and Usk valleys*. Unpublished M.Phil Thesis, Birkbeck College, University of London. 374pp.

Pounder, E. J. (1989) *Classic Landforms of the Northern Dales.* 10. The Geographical Association (in conjunction with the British Geomorphological Research Group), Sheffield. 48pp.

Raistrick, A. (1926) The glaciation of Wensleydale, Swaledale, and adjoining parts of the Pennines. *Proceedings of the Yorkshire Geological Society* **20,** 366-410.

Raistrick, A. (1975) *The Lead Industry of Wensleydale and Swaledale.* Volume 1: The Mines. Moorland Publishing Company, Hartington. 120pp. 2.

Raistrick, A. and Jennings, B. (1965) *A History of Lead Mining in the Pennines.* Longmans, Green and Co., London. 347pp.

Ramamoorthy, S. and Rust, B. R. (1978) Heavy metal exchange processes in sediment-water systems. *Environmental Geology* **2,** 165-172.

Ramsey, M. H. (1997a) Measurement uncertainty arising from sampling: implications for the objectives of geoanalysis. *Analyst* **122,** 1255-1260.

Ramsey, M. H. (1997b) Sampling and sample preparation. [In] Gill, R. (Ed.) *Modern Analytical Geochemistry: An introduction to quantitative chamical analysis for earth, environmental and materials scientists.* Longman, Harlow, 12-28.

Ramsey, M. H. (1998) Sampling as a source of measurement uncertainty: techniques for quantification and comparison with analytical sources. *Journal of Analytical Atomic Spectrometry* **13,** 97-104.

Ramsey, M. H. and Argyraki, A. (1997) Estimation of measurement uncertainty from field sampling: implications for the classification of contaminated land. *The Science of the Total Environment* **198,** 243-257.

Ramsey, M. H., Thompson, M. and Banerjee, E. K. (1987) Realistic assessment of analytical data quality from Inductively Coupled Plasma Atomic Emission Spectrometry. *Analytical Proceedings* **24,** 260-265.

Rang, M. C., Kleijn, C. E. and Schouten, C. J. (1987) Mapping of soil pollution by application of classical geomorphological and pedological field techniques. [In] Gardiner, V. (Ed.) *International Geomorphology 1986: Proceedings of the First International Conference on Geomorphology.* Part 1. John Wiley and Sons, Chichester, 1029-1044.

Rang, M. C. and Schouten, C. J. (1989) Evidence for historical heavy metal pollution in floodplain soils: the Meuse. [In] Petts, G. E. (Ed.) *Historical Change of Large Alluvial Rivers: Western Europe.* John Wiley and Sons, Chichester, 127-142.

Reid, I., Bathurst, J. C., Carling, P. A., Walling, D. E. and Webb, B. W. (1997) Sediment Erosion, Transport and Deposition. [In] Thorne, C. R., Hey, R. D. and Newson, M. D. (Eds.) *Applied Fluvial Geomorphology for River Engineering and Management.* John Wiley and Sons Ltd., Chichester, 95-135.

Reimann, C. and de Caritat, P. (1998) *Chemical Elements in the Environment.* Springer-Verlag, Berlin. 398pp.

Rennard, S. (2000) York floods situation latest - river levels now highest in 375 years. News release, 4th November 2000. Accessed: 06/11/00.

Rice, S. (1999) The nature and controls of downstream fining within sedimentary links. *Journal of Sedimentary Research* **69A,** 32-39.

Richards, K. S. (1982) *Rivers: Form and Process in Alluvial Channels.* Blackburn Press, Caldwell, New Jersey. 361pp.

River Swale Regeneration Project (2001) River Swale Regeneration Project website. http://www.riverswale.org.uk. Accessed: 23/04/02.

Roberts, R. G. and Church, M. (1986) The sediment budget in severely disturbed watersheds, Queen Charlotte Ranges, British Columbia. *Canadian Journal of Forest Research* **16,** 1092-1106.

Rowan, J. S., Barnes, S. J. A., Hetherington, S. L., Lambers, B. and Parsons, F. (1995) Geomorphology and pollution: the environmental impacts of lead mining, Leadhills, Scotland. *Journal of Geochemical Exploration* **52,** 57-65.

Rowan, J. S. and Franks, S. W. (2002) Heavy metal mining and flood plain response in the upper Clyde basin, Scotland. [In] Dyer, F. J., Thoms, M. C. and Olley, J. M. (Eds.) *The Structure, Function and Management Implications of Fluvial Sedimentary Systems.* IAHS Publication no. 276. IAHS Press, Wallingford, 143-150.

Rust, B. R. and Nanson, G. C. (1989) Bedload transport of mud as pedogenic aggregates in modern and ancient rivers. *Sedimentology* **36,** 291-306.

Salomons, W. (1988) Impact of metals from mining and industry on the hydrosphere. [In] Strigel, G. (Ed.) *Metals and metalloids in the hydrosphere: impact through mining and industry, and prevention technology.* Proceedings of an IHP workshop, Bochum, Federal Republic of Germany, 21-25th September 1987. UNESCO, Paris, 1-41.

Salomons, W. and Eysink, W. D. (1981) Pathways of particulate trace metals from rivers to the southern North Sea. [In] Nio, S.-D., Schüttenhelm, R. T. E. and van Weering, T. C. E. (Eds.) *Holocene Marine Sedimentation in the North Sea Basin.* Special Publication of the International Association of Sedimentologists 5. Blackwell Scientific Publications, Oxford, 429-450.

Salomons, W. and Förstner, U. (1984) *Metals in the Hydrocycle.* Springer-Verlag, Berlin. 349pp.

Scott, R. O. and Ure, A. M. (1972) Some sources of contamination in trace analysis. *Proceedings of the Society of Analytical Chemistry* **9,** 288-293.

Scrutton, C. (1994) Geological history of Yorkshire. [In] Scrutton, C. (Ed.) *Yorkshire Rocks and Landscape: a field guide.* Ellenbank Press for the Yorkshire Geological Society, Maryport, Cumbria, 9-20.

Sear, D. A. and Carver, S. (1996) The release and dispersal of Pb and Zn contaminated sediments within an Arctic braided river system. *Applied Geochemistry* **11,** 187-195.

Sedgwick, C. M. (1998) Historic metal contamination at Reeth, Upper Swaledale. [In] Howard, A. J. and Macklin, M. G. (Eds.) *The Quaternary History of the Eastern Yorkshire Dales: Field Guide. The Holocene Alluvial Record.* Quaternary Research Association, London, 67-76.

Sedgwick, C. M. (2000) *Heavy metal contamination in the River Swale catchment, northern England*. Unpublished PhD Thesis, University of Leeds. 300pp.

Shaw, G. and Wheeler, D. (1994) *Statistical Techniques in Geographical Analysis.* (Second ed.) David Fulton Publishers, London. 359pp.

Shawyer, M. S. (1987) The rainfall of 22-26 August 1986. *Weather* **42,** 114-117.

Shennan, I., Coulthard, T. J., Flather, R. A., Horton, B. P., Macklin, M. G., Rees, J. G. and Wright, M. (2003) Integration of shelf evolution and river basin models to simulate Holocene sediment dynamics of the Humber Estuary during periods of sea-level change and variations in catchment ediment supply. *The Science of the Total Environment* **314-316,** 737-754.

Shiller, A. M. (1997) Dissolved trace elements in the Mississippi River: Seasonal, interannual, and decadal variability. *Geochimica et Cosmochimica Acta* **61,** 4321-4330.

Sinclair, A. J. (1974) Selection of threshold values in geochemical data using probability graphs. *Journal of Geochemical Exploration* **3,** 129-149.

Smith, B. P. G., Naden, P. S., Leeks, G. J. L. and Wass, P. D. (2003a) Characterising the fine sediment budget of a reach of the River Swale, Yorkshire, U.K. during the 1994 to 1995 winter season. *Hydrobiologia* **494,** 135-143.

Smith, B. P. G., Naden, P. S., Leeks, G. J. L. and Wass, P. D. (2003b) The influence of storm events on fine sediment transport, erosion and deposition within a reach of the River Swale, Yorkshire, UK. *The Science of the Total Environment* **314-316,** 451-474.

Sparks, H. (1998) *Radiometric dating and assessment of heavy metal contamination to vertically accreted sediments of the River Swale, North-East England*. Unpublished B.Sc. dissertation, University of Lancaster. 74pp.

Stewart, W. L. and Allcroft, R. (1956) Lameness and poor thriving in lambs on farms in old lead mining areas in the Pennines. *Veterinary Record* **68,** 723-728.

Stigliani, W. M. (Ed.) (1991) *Chemical time bombs: definitions, concepts, and examples.* Executive Report 16. International Institute for Applied Systems Analysis, Laxenburg, Austria.

Stigliani, W. M., Doelman, P., Salomons, W., Schulin, R., Smidt, G. R. G. and Van der Zee, S. E. A. T. M. (1991) Chemical Time Bombs: Predicting the Unpredictable. *Environment* **33,** 4-9, 26-30.

Strahler, A.N. (1952) Hypsometric (area-altitude) analysis of erosional topography. *Bulletin of the Geological Society of America* **63**, 1117-1142.

Swanson, V., Frist, L., Radar, R., Jr. and Huffman, C., Jr. (1966) Metal sorption by northwest Florida humate. *USGS Professional Paper* **550-C,** 174-177.

Swennen, R. and Van der Sluys, J. (1998) Zn, Pb, Cu and As distribution patterns in overbank and medium-order stream sediment samples: their use in exploration and environmental geochemistry. *Journal of Geochemical Exploration* **65,** 27-45.

Swennen, R. and Van der Sluys, J. (2002) Anthropogenic impact on sediment composition and geochemistry in vertical overbank profiles of river alluvium from Belgium and Luxembourg. *Journal of Geochemical Exploration* **75,** 93-105.

Swennen, R., Van der Sluys, J., Hindel, R. and Brusselmans, A. (1998) Geochemistry of overbank and high-order stream sediments in Belgium and Luxembourg: a way to assess environmental pollution. *Journal of Geochemical Exploration* **62,** 67-79.

Swennen, R., Van Keer, I. and De Vos, W. (1994) Heavy metal contamination in overbank sediments of the Geul river (East Belgium): Its relation to former Pb-Zn mining activities. *Environmental Geology* **24,** 12-21.

Taylor, M. P. (1996) The variability of heavy metals in floodplain sediments: a case study from mid Wales. *Catena* **28,** 71-87.

Taylor, M. P. and Macklin, M. G. (1997) Holocene alluvial sedimentation and valley floor development: the River Swale, Catterick, North Yorkshire, UK. *Proceedings of the Yorkshire Geological Society* **51,** 317-327.

Taylor, M. P. and Macklin, M. G. (1998) Holocene alluvial sedimentation of the River Swale at Catterick, North Yorkshire. [In] Howard, A. J. and Macklin, M. G. (Eds.) *The Quaternary History of the Eastern Yorkshire Dales: Field Guide. The Holocene Alluvial Record.* Quaternary Research Association, London, 82-88.

Taylor, M. P., Macklin, M. G. and Hudson-Edwards, K. A. (2000) River sedimentation and fluvial response to Holocene environmental change in the Yorkshire Ouse Basin, northern England. *The Holocene* **10,** 201-212.

Tennant, C. B. and White, M. L. (1959) Study of the distribution of geochemical data. *Economic Geology* **54,** 1281-1290.

Thompson, M. (1992) Data quality in applied geochemistry: the requirements, and how to achieve them. *Journal of Geochemical Exploration* **44,** 3-22.

Thompson, M. and Ramsey, M. H. (1995) Quality concepts and practices applied to sampling - an exploratory study. *Analyst* **120,** 261-270.

Thornton, I. (Ed.) (1983) *Applied Environmental Geochemistry.* Academic Press, London. 501pp.

Tobías, F. J., Bech, J. and Sánchez Algarra, P. (1997a) Establishment of the background levels of some trace elements in soils of NE Spain with probability plots. *The Science of the Total Environment* **206,** 255-265.

Tobías, F. J., Bech, J. and Sánchez Algarra, P. (1997b) Statistical approach to discriminate background and anthropogenic input of trace elements in soils of Catalonia, Spain. *Water, Air, and Soil Pollution* **100,** 63-78.

Totland, M., Jarvis, I. and Jarvis, K. E. (1992) An assessment of dissolution techniques for the analysis of geological samples by plasma spectrometry. *Chemical Geology* **95,** 35-62.

Turekian, K. K. and Wedepohl, K. H. (1961) Distribution of the elements in some major units of the earth's crust. *Geological Society of America Bulletin* **72,** 175-192.

United States Army Corps of Engineers (2002) *HEC-RAS River Analysis System User's Manual, Version 3.1.* Report CPD-68. USACE Hydrologic Engineering Center, Davis, CA. 420pp.

Walling, D. E. and Owens, P. N. (2002) The role of flood plain sedimentation in catchment sediment and contaminant budgets. [In] Dyer, F. J., Thoms, M. C. and Olley, J. M. (Eds.) *The Structure, Function and Management Implications of Fluvial Sedimentary Systems.* IAHS Publication no. 276. IAHS Press, Wallingford, 407-416.

Walling, D. E. and Owens, P. N. (2003) The role of overbank sedimentation in catchment contaminant budgets. *Hydrobiologia* **494,** 83-91.

Walling, D. E., Owens, P. N., Carton, J., Leeks, G. J. L., Lewis, S., Meharg, A. A. and Wright, J. (2003a) Storage of sediment-associated nutrients and contaminants in river channel and floodplain systems. *Applied Geochemistry* **18,** 195-220.

Walling, D. E., Owens, P. N., Foster, I. D. L. and Leeks, G. J. L. (2003b) Changes in the fine sediment dynamics of the Ouse and Tweed basins in the UK over the last 100-150 years. *Hydrological Processes* **17,** 3245-3269.

Walling, D. E., Owens, P. N. and Leeks, G. J. L. (1998a) Erratum to 'The characteristics of overbank deposits associated with a major flood event in the catchment of the River Ouse, Yorkshire, UK' [Catena 31 (1997) 53-75]. *Catena* **32,** 309-331.

Walling, D. E., Owens, P. N. and Leeks, G. J. L. (1998b) The role of channel and floodplain storage in the suspended sediment budget of the River Ouse, Yorkshire, UK. *Geomorphology* **22,** 225-242.

Walling, D. E., Owens, P. N. and Leeks, G. J. L. (1999a) Fingerprinting suspended sediment sources in the catchment of the River Ouse, Yorkshire, UK. *Hydrological Processes* **13,** 955-975.

Walling, D. E., Owens, P. N. and Leeks, G. J. L. (1999b) Rates of contemporary overbank sedimentation and sediment storage on the floodplains of the main channel systems of the Yorkshire Ouse and River Tweed, UK. *Hydrological Processes* **13,** 993-1009.

Walsh, J. N., Gill, R. and Thirlwall, M. F. (1997) Dissolution procedures for geological and environmental samples. [In] Gill, R. (Ed.) *Modern Analytical Geochemistry: An introduction to quantitative chamical analysis for earth, environmental and materials scientists.* Longman, Harlow, 29-40.

Whitaker, T. D. (1823) *An history of Richmondshire, in the North Riding of the County of York, together with those parts of the Everwicschire of Domesday which form the Wapentakes of Lonsdale, Ewecross, and Amunderness (with illustrations by J. M. W. Turner).* Longman, Hurst, Rees, Orme and Brown, London. 2.

White, R. F. (1989) Conservation of the remains of the lead industry in the Yorkshire Dales. *Industrial Archaeology Review* **XII,** 94-104.

White, R. F. (1998) The lead industry in the Yorkshire Dales. [In] Howard, A. J. and Macklin, M. G. (Eds.) *The Quaternary History of the Eastern Yorkshire Dales: Field Guide. The Holocene Alluvial Record.* Quaternary Research Association, London, 54-66.

Williams, L. G., Joyce, J. C. and Monk, J. T., Jr. (1973) Stream-velocity effects on the heavy-metal concentrations. *Journal of the American Water Works Association* **65,** 275-279.

Williams, L. G., Kopp, J. F. and Tarzell, C. M. (1966) Effects of hydrographic changes on contaminants in the Ohio River. *Journal of the American Water Works Association* **58,** 333-339.

Williford, C. W., Jr. and Bricka, R. W. (2001) Physical separation of metal-contaminated soils. [In] Iskandar, I. K. (Ed.) *Environmental restoration of metals-contaminated soils.* Lewis Publishers, Boca Raton, 121-165.

Wolfenden, P. J. and Lewin, J. (1977) Distribution of metal pollutants in floodplain sediments. *Catena* **4,** 309-317.

Wolfenden, P. J. and Lewin, J. (1978) Distribution of metal pollutants in active stream sediments. *Catena* **5,** 67-78.

Xue, H., Nhat, P. H., Gächter, R. and Hooda, P. S. (2003) The transport of Cu and Zn from agricultural soils to surface water in a small catchment. *Advances in Environmental Research* **8,** 69-76.

Zhao, Y., Marriott, S., Rogers, J. and Iwugo, K. (1999) A preliminary study of heavy metal distribution on the floodplain of the River Severn, UK by a single flood event. *The Science of the Total Environment* **243/244,** 219-231.