

Appendices for: John Stuart Webb, FREng, and Applied Geochemistry at the Imperial College of Science and Technology, London

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A complete list of all GPRC/AGRGR publications, plus the few AGRGR *Technical Communications* not concerned with analytical methods, is given in Appendix 1; of *Technical Communications* on analytical methods in Appendix 2; and of GPRC/AGRGR theses in Appendix 3.

Appendix 1. Bibliography of GPRC/AGRGR publications 1950–1988

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- Appendix 2. Technical Communications (abbreviated operating instructions for analytical methods) of the GPRC/AGRG, 1956–1973**
- Note:* nos. 6, 9, 12, 13, 41, 47, 57, 58, 60, 61 are on non-analytical topics and are included in Appendix 1.
1. STANTON, R.E. & GILBERT, M.A. 1956. Analytical procedures employed at the Geochemical Prospecting Research Centre at Imperial College, London. 1. Preliminary treatment of soil and sediment samples for analysis.
 2. STANTON, R.E. & GILBERT, M.A. [1956] Analytical procedures employed at the Geochemical Prospecting Research Centre at Imperial College, London. 2. Copper lead. zinc in soils sediments. rocks, by dithizone in carbon tetrachloride [After: Bloom H. Crowe H.E. 1953. *U.S. Geological Survey Open File Report*].
 3. STANTON, R.E. & GILBERT, M.A. 1956. Analytical procedures employed at the Geochemical Prospecting Research Centre at Imperial College, London. Arsenic in soils, sediments and rocks by a modified Gutzeit test [After: Almond, H. 1953. Field method for the determination of traces of arsenic in soils. *Analytical Chemistry*, **25**, 1766–1767].
 4. STANTON, R.E. & GILBERT, M.A. 1956. Analytical procedures employed at the Geochemical Prospecting Research Centre at Imperial College, London. Copper, cobalt and nickel in soils, sediments and rocks by chromatography [After: Hunt E.C., North, A.A. & Wells, R.A. 1955. The application of paper chromatographic methods of analysis to geochemical prospecting. *Analyst*, **80**, 172–194].
 5. STANTON, R.E. & GILBERT, M.A. 1956. Chromium in soils, sediments and rocks by chromate and by diphenylcarbazide.
 7. WOOD, G.A. & STANTON, R.E. 1956. A rapid method for the determination of chromium in soils for use in geochemical prospecting. [cf. Wood, G.A. & Stanton, R.E. 1957. A rapid method for the determination of chromium in soils for use in geochemical prospecting. *Transactions of the Institution of Mining and Metallurgy*, **66**, 331–340].
 8. HOLMAN, R.H.C. 1956. A method for determining soluble copper in soils and alluvium – introducing white spirit as a solvent for dithizone. [cf. Holman, R.H.C. 1956. A method for determining readily soluble copper in soil and alluvium; introducing white spirit as a solvent for dithizone. *Transactions of the Institution of Mining and Metallurgy*, **66**, 7–16].
 10. STANTON, R.E. & GILBERT, M.A. 1956. Analytical procedures employed at the Geochemical Prospecting Research Centre at Imperial College, London. 6. Molybdenum and tungsten in soils, sediments and rocks by dithiol. [Modified from North, A.A. n.d. Department of Scientific and Industrial Research Scientific Report CRL/AE 127. cf. North, A.A. 1956. Geochemical field methods for the determination of tungsten and molybdenum in soils. *Analyst*, **81**, 660–668].
 11. WOOD, G.A. 1956. A rapid method for the determination of small amounts of tin in soil. [cf. Wood, G.A. 1959. A rapid method for the determination of small amounts of tin in soils. *Congreso Geológico Internacional. XXe Sesión. Ciudad de México, 1956. Symposium de Exploración Geoquímica. II*, 461–474].
 14. ANON. 1958 [rev. 1960, 1961, 1965] Determination of cobalt in soil, sediment, rock samples. [Rev. after Stanton, R.E., McDonald, A.J. 1961. Field determination of cobalt in soil and sediment samples. *Transactions of the Institution of Mining and Metallurgy*, London, **71**, 511–516].
 15. ANON. 1960 [rev. 1962, 1965, 1967]. Determination of molybdenum in soil, sediment, rock samples. [After: North A.A. 1956. Geochemical field methods for the determination of tungsten and molybdenum in soils. *Analyst*, **81**, 660–668; Marshall, N.J. 1964. Rapid determination of molybdenum in geochemical samples using dithiol. *Economic Geology*, **59**, 142–148].
 16. ANON. 1960 [rev. 1962, 1964]. Determination of lead in soil, sediment and rock samples. [After: Bureau de Recherches Géologiques, Géophysiques et Minières 1957].
 17. ANON. 1960 [rev. 1962, 1965]. Determination of antimony in soil, sediment, rock samples. [After: Stanton, R.E., McDonald, A.J., 1961. Field determination of antimony in soil, sediment, samples. *Transactions of the Institution of Mining and Metallurgy*, **71**, 517–522; 1961. The spectrophotometric determination of antimony with Brilliant green. *Analyst*, **87**, 299–301].
 18. ANON. 1960 [rev. 1962, 1964, 1966]. Determination of tin in soils, sediments. [After: Stanton, R.E., McDonald, A.J. 1961. Field determination of tin in geochemical soil and stream sediment surveys. *Transactions of the Institution of Mining and Metallurgy*, **71**, 27–29; cf. McDonald, A.J. & Stanton, R.E. 1962. The spectrophotometric determination of tin in soil with gallein. *Analyst*, **87**, 600–602].
 19. STANTON, R.E. 1962. The field determination of zinc with dithizone in the presence of aluminium. [cf. Stanton, R.E. and McDonald, A.J. 1963. Application of the AutoAnalyzer to the determination of zinc in soils and sediments. *Analyst*, **88**, 608–613].
 20. ANON. 1962. Determination of arsenic in soil, sediment and rock samples. [After: Almond, H. 1953. Field method for the determination of traces of arsenic in soils. *Analytical Chemistry*, **25**, 1766–1767].
 21. ANON. 1962 [rev. 1965]. Determination of cold-extractable heavy metals in sediment samples. [After: Bloom, H., 1955. A field method for the determination of ammonium citrate-soluble heavy metals in soils and alluvium. *Economic Geology*, **50**, 533–541].

22. ANON. 1959 [rev. 1961, 1965]. Determination of beryllium in soil, sediment and rock samples. [After: Hunt, E.C., Stanton, R.E. & Wells, R.A. 1960. Field determination of beryllium in soils for geochemical prospecting. *Transactions of the Institution of Mining and Metallurgy, London*, **69**, 361–369.]
23. ANON. 1961 [1962; rev. 1964]. Determination of copper with 2,2'-diquinolyl in soil, sediment samples. [After: Almond, H. 1955. Rapid field and laboratory method for the determination of copper in soil and rock. *U.S. Geological Survey Bulletin*, **1036-A**, 1–8.]
24. ANON. 1957 [1960; rev. 1962, 1965]. Determination of copper with dithizone in soil, sediment samples. [After: Bloom, H., Crowe, H.E. 1953. *U.S. Geological Survey Open File Report*.]
25. ANON. 1960 [rev. 1962]. Determination of cold-extractable copper in soil, sediment samples. [After: Holman, R.H.C. 1956. A method for determining readily-soluble copper in soil and alluvium – Introducing white spirit for dithizone. *Transactions of the Institution of Mining and Metallurgy*, **66**, 7–16.]
26. ANON. 1960 [1962, rev. 1965, 1967]. Determination of carbonate, bicarbonate in natural water. [After: Scott, N.W. 1955. *Standard methods of chemical analysis*. (5th ed.) The Technical Press, London, **II**, 2095.]
27. ANON. 1960 [1962]. Determination of sulphate in natural water. [After: Scott, N.W. 1955. *Standard methods of chemical analysis*. 5th ed. The Technical Press, London, **II**, 2091.]
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29. ANON. 1960 [rev. 1962, 1966]. Determination of chloride in natural water. [After: Anonymous. 1956. *British Standard 2690. Methods of testing water used in industry*. British Standards Institution, London, **50**.]
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31. ANON. 1960 [1962; rev. 1965]. Determination of cold-extractable zinc in soil and sediment samples. [Adapted from: Holman, R.H.C. 1956. A method for determining readily-soluble copper in soil and alluvium – Introducing white spirit for dithizone. *Transactions of the Institution of Mining and Metallurgy*, **66**, 7–16.]
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34. ANON. 1962 [rev. 1965]. Preparation of soil and sediment samples for analysis. [After: Stanton, R.E. & Gilbert, M.A. 1956. *Technical Communication 1*, G.P.R.C., Imperial College London.]
35. ANON. 1962 [rev. 1965]. Determination of chromium in soil, sediment and rock samples. [After: Wood, G.A. & Stanton, R.E. 1957. A rapid method for the determination of chromium in soils for use in geochemical prospecting. *Transactions of the Institution of Mining and Metallurgy*, **66**, 331–340.]
36. ANON. 1960 [1962; rev. 1965]. Determination of manganese in soil and sediment samples. [After: Almond, H. 1953. A field method for the determination of manganese in soils adapted from methods described in the literature. *U.S. Geological Survey Open File Report*.]
37. ANON. 1962 [rev. 1965]. Determination of tungsten in soil, sediment and rock samples. [After: North, A.A. 1956. Geochemical field methods for the determination of tungsten and molybdenum in soils. *Analyst*, **81**, 660–668.]
38. ANON. n.d. [1962; rev. 1965]. Separation of cobalt, copper, lead, nickel and zinc from soil sediments and silicate rocks after decomposition with hydrofluoric acid. [After: Stanton, R.E., McDonald, A.J. and Carmichael, I. 1962. The determination of some trace elements in silicate rocks. *The Analyst*, **87**, 134–39.]
39. ANON. 1962 Determination of potassium in soil, sediment and rock samples. [After: Carmichael, I.S.E. 1962. *Methods for the analysis of silicate rocks. Part I*. Imperial College of Science and Technology, London.]
40. ANON. [Stanton, R.E.]. 1960 [rev. 1962]. Determination of iron in soil and sediment samples. [Adapted from: Sandell, E.B. 1959. *Colorimetric determination of traces of metals*. 3rd ed. Interscience Publishers, New York and London.]
42. ANON. 1962 [rev. 1965]. Determination of niobium in soil, sediment and rock samples. [After: Hunt, E.C., North, A.A. & Wells, R.A. 1955. Application of paper chromatographic methods of analysis to geochemical prospecting. *Analyst*, **80**, 172–194.]
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44. ANON. 1962 [rev. 1967]. Determination of uranium in natural water samples. [After: Ostle, D. 1954. Geochemical prospecting for uranium. *Mineralogical Magazine*, **140**, 201–208.]
45. ANON. 1963 [rev. 1966]. The determination of cold-extractable arsenic in soil and sediment samples. [After: James, C.H. 1957. *Technical Communication 12*, G.P.R.C., Imperial College, London.]
46. ANON. 1963. The statistical control of routine analysis. [After: Craven, C.A.U. 1954. Statistical estimation of the accuracy of assaying. *Transactions of the Institution of Mining and Metallurgy*, **63**, 551–563.]
48. ANON. 1965. The determination of gold in soil and sediment samples. [After: Stanton, R.E. & McDonald, A.J. 1964. The determination of gold in soil with Brilliant green. *Analyst*, **89**, 767–770.]
49. ANON. 1965. The determination of arsenic in soil and sediment samples. [After: Stanton, R.E. 1964. The field determination of arsenic in soils and sediments. *Economic Geology*, **59**, 1599–1602.]
50. ANON. 1964 [rev. 1965]. Decomposition of samples with nitric and perchloric acid. [After: Stanton, R.E. & McDonald, A.J. 1964. The determination of gold in soil with Brilliant green. *Analyst*, **89**, 767–770.]
51. ANON. 1965. Determination of selenium in soils and sediments. [After: Stanton, R.E. & McDonald, A.J. 1965. The determination of selenium in soils and sediments with 3,3'-diaminobenzidine. *The Analyst*, **90**, 497–499.]
52. ANON. 1966. Determination of phosphorous in soil, sediment and rock samples. [After: Ward, F.N., Lakin, H.W., Canney, F.C. *et al.* 1963. Analytical methods used in geochemical exploration by the U.S. Geological Survey. *U.S. Geological Survey Bulletin*, **1152**, 66.]
53. ANON. 1962 [1966]. Determination of carbonate in soil samples.
54. ANON. 1967. The determination of boron in soils, sediments and rocks. [After: Stanton, R.E. & McDonald, A.J. 1966. The colorimetric determination of boron in soils, sediments and rocks with Methylene blue. *Analyst*, **91**, 775–778.]
55. ANON. 1967. Abbreviated operating instructions for the A.G.R.G. mercury vapour meter [After: James, C.H. & Webb, J.S. 1964. Sensitive mercury vapour meter for use in geochemical prospecting. *Transactions of the Institution of Mining and Metallurgy, London*, **73**, 633–641.]
56. ANON. 1967. The determination of molybdenum in soil and sediment samples. [After: Stanton, R.E. & Hardwick, A.J. 1967. The colorimetric determination of molybdenum in soils and sediments by zinc dithiol. *Analyst*, **92**, 387–390.]
57. ANON. [Thompson, M.]. 1973. Users guide to System C. A brief description and provisional specification of a rapid computerised direct reading spectrographic technique.

Appendix 3. GPRC and AGRG thesis topics, 1951–1988

Notes: Unless otherwise indicated, all the theses listed here were written by students of the Department of Geology: DIC, Diploma of Imperial College; PhD, MPhil and MSc theses are submitted for University of London degrees (in many cases these were also submitted for the DIC). CC, Computing and Control; CS, Computing Science; ET, Environmental Technology; G, Geology; IC, Inorganic chemistry; MG, Mining Geology; S, Statistics. Name of supervisor(s) in parentheses.

- ABRAHAM, PETER WILLIAM. 1983. *Distribution, dispersion and agricultural significance of metals in soils of the mining regions of south west England*. PhD (Thornton).
- AGUILAR [RAVELLO], ALFONSO NEMESIO. 1974. *The regional geochemical distribution of arsenic in south west England*. PhD (Lowenstein).
- AHMED, ADLEY ABDEL MAGEED. 1968. *Geochemical and mineralogical studies of sediments from the south-west African Shelf*. MPhil (Tooms).
- ANDERSON, ROBERT KEITH. 1986. *Preconcentration and speciation techniques for the analyses of metals in natural waters*. PhD (Thornton).
- APLIN, ANDREW CAMERON. 1983. *Geochemistry and environment of deposition of some ferromanganese oxide deposits from the south equatorial Pacific*. PhD (Cronan).
- ARIAS FARIAS, JAIME ALFREDO. 1979. *The application of selected vapour geochemistry techniques to prospecting for concealed mineralization in Northern Chile*. PhD (Hale & Lovell).
- ARMOUR-BROWN, ASHLYN. 1971. *Provincial and regional geochemical studies in Zambia*. PhD (Nichol & Howarth).
- ARNORSSON, STEFAN. 1969. *A geochemical study of selected elements in thermal waters of Iceland*. PhD (Tooms).
- ATKINSON, WARREN JOHN. 1967. *Regional geochemical studies in County Limerick, Ireland, with particular reference to selenium and molybdenum*. PhD (Webb).

- BAILEY, IAN FREDERICK. 1980. *The use of advanced analytical techniques for multi-element analysis of water*. MSc [ET] (Thornton).
- BAND, RAYMOND BRIAN. 1969. *Dispersion of nickel and molybdenum from mineralization in glaciated terrain, S. Norway*. PhD (Bradshaw).
- BEE, ALASTAIR GEORGE. 1974. *The marine geochemistry and geology of the Atlantic continental shelf of central Morocco*. PhD (Cronan).
- BIGNELL, ROGER DOUGLAS. 1975. *The geochemistry of metalliferous brine precipitates and other sediments from the Red Sea*. PhD (Cronan).
- BIRD, CHERRY ELIZABETH. 1981. *A study of the remobilization of heavy metals and arsenic from a spoil heap in Cornwall*. MSc [ET] (Thornton).
- BOOTH, LESLIE GARDNER. 1979. *The physical and chemical dispersion of tin*. MSc [MG] (C. J. Dixon; MG).
- BOYLE, DANIEL ROBERT. 1976. *The geochemistry of fluorine and its applications in mineral exploration*. PhD (Webb).
- BRABEC, DRAGAN. 1964. *Geochemical prospecting studies in Bunmahon district, Co. Waterford, Ireland; and Gornja Lipa area, East Serbia, Yugoslavia*. DIC (James & Tooms).
- BREBNER, JOCELYN. 1987. *The role of soil ingestion in the trace element nutrition of grazing livestock*. PhD (Thornton).
- BROWN, ALASTAIR GORDON. 1970. *Dispersion of copper and associated trace elements in a Kalabari sand environment, North-west Zambia*. PhD (Tooms).
- BROWN, CHRISTOPHER JOHN. 1983. *Geology, geochemistry and economic significance of the celestite deposits of Avon*. PhD (Howarth).
- BUTT, CHARLES RAY MORTON. 1971. *The influence of environment on regional geochemical patterns in Northern Ireland*. PhD (Nichol & Thornton).
- BYMAN, JAN ERIK GUSTAV. 1978. *Investigation of sulphur vapour techniques in exploration geochemistry*. MPhil (Webb & Lovell).
- ÇAĞATAY, MEMET NAMICK. 1977. *Development of geochemical exploration techniques for massive sulphide ore deposits, Eastern Black Sea region, Turkey*. PhD (Boyle & Meyer).
- CAMPAIN, RICHARD PHILLIPS. 1981. *Litho-geochemistry in relation to the lead-zinc deposits of Mendip, Somerset*. DIC (Howarth).
- CASTILLO-MUÑOZ, ROLANDO. 1973. *Application of discriminant and cluster analysis to regional geochemical surveys*. PhD (Howarth).
- CLEWS, DIRK RICHARD. 1962. *The secondary dispersion of copper in the drainage system of the Kilembe Mine area, Uganda*. PhD (Webb).
- COLBOURN, PHILIP. 1976. *The application of geochemical reconnaissance data to trace metal pollution in agriculture*. PhD (Thornton & Alloway).
- COLE, THOMAS GEORGE. 1984. *Mineralogy and geochemistry of metalliferous sediments from the Bauer Deep, S.E. Pacific and Atlantis II Deep, Red Sea*. PhD (Cronan & Dr. H. Shaw [G]).
- COLES, ROBIN STEVEN. 1979. *Runoff influences on heavy metal content of Hope Brook, Salop*. MSc [ET] (Dr. G. R. Conway; ET).
- COLLEY, NICHOLAS MARTIN. 1981. *The geochemistry of ferromanganese oxide deposits and pelagic sediments of the north-west Indian Ocean*. PhD (Cronan).
- COOPE, JOHN ALAN. 1958. *Studies in geochemical prospecting for nickel in Bechuanaland and Tanganyika*. PhD (Webb & Tooms).
- CORNEIL, ERNEST RAY. 1960. *Automatic colour determination, with special reference to the analysis of soils*. PhD (Prof. A. Porter).
- COWARD, RICHARD NEIL. 1986. *A statistical appraisal of regional geochemical data from the south-west Pacific for mineral exploration*. PhD (Cronan).
- CRISP, DAVID ALAN. 1975. *Application of multivariate methods to regional geochemistry: the evaluation of a new technique*. MSc [MG] (Howarth).
- CRONAN, DAVID SPENCER. 1967. *The geochemistry of some manganese nodules and associated pelagic deposits*. PhD (Tooms).
- CRUZAT OSSA, ALFREDO CAMILIO EMILIO. 1974. *Application of regional stream sediment geochemistry in forecasting base metal production, northern England*. PhD (Meyer).
- DAVIE, ROBERT FRANKLIN. 1976. *A review of exploration geochemistry in the Canadian Shield*. MSc [MG]. (?)
- DAVIES, PHILIP RHYS. 1983. *Geochemical application of ridge regression for tin-mineralized granitoids*. MSc [MG] (Howarth).
- DAVIES, WILLIAM CAMERON. 1971. *Regional geochemistry of stream sediments derived from an area underlain by the English Permo-Trias*. PhD (Tooms & Webb).
- DE GRYS, ANTONETTE MARGARETHA. 1959. *Factors affecting the secondary geochemical dispersion of metals associated with sulphide mineralization [Isle of Man]*. MSc [MG] (Webb, Tooms and Dr. S.E. Jacobs, Department of Bacteriology).
- DEBNAM, ADRIAN HARRY. 1961. *Geochemical prospecting studies for beryllium in Central and East Africa*. PhD (Webb).
- DONOVAN, PETER RICHARD. 1965. *Geochemical dispersion in relation to base metal deposits in glacial terrain in west-central Eire*. PhD (James).
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- ELLIOTT, IVOR LLEWELLYN. 1962. *Dispersion of arsenic and molybdenum in surface drainage, Sierra Leone*. PhD (Webb, Mather & Tooms).
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- FANTA, PABLO. 1972. *Effects of seasonal variations on the iron, manganese and associated metal contents of stream sediments and soils*. MPhil (Lowenstein).
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- FONG, TAI LOON. 1975. *Feature selection in multiclass pattern recognition*. MSc [CC] (Howarth & Dr. F. N. Parr [CC]).
- FOO, BAN NYEN. 1979. *A comparative study of the paragenesis, geochemistry and fluid inclusions of selected primary tin deposits of west Malaysia*. PhD [MG] (C. Halls; MG).
- FORTESQUE, JOHN ADRIAN CLAUDE. 1962. *Some aspects of regional geochemical mapping in the southern province of Northern Rhodesia*. DIC (Webb & Tooms).
- GARDNER, COLLINS ULRICH MAXIMILLIAN. 1980. *The distribution of ten trace elements in rocks, soils and stream sediments in seven regions of England and Wales*. PhD (Thornton).
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- GOVETT, GERALD JAMES SPURGEON. 1958. *Geochemical prospecting studies in Northern Rhodesia*. PhD (Webb & Tooms).
- GREGORY, GEORGE PETER. 1970. *Geochemical dispersion patterns related to kimberlite intrusives in North America*. PhD (Tooms).
- GURU, SARWESHWAR. 1972. *Geochemical studies in the South China Sea*. DIC (Tooms).
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- HARDEN, GEOFFREY. 1962. *Geochemical dispersion patterns and their relation to bedrock geology in the Nyawa area, Northern Rhodesia*. PhD (Tooms & Webb).
- HAZELHOFF ROELFZEMA, BRUNDT HARM. 1968. *Geochemical dispersion of tin in marine sediments, Mount's Bay, Cornwall*. PhD (Tooms).
- HEMANS, DAVID AUSTIN. 1980. *Geochemical methods in exploration*. MSc [MG] (C.J. Dixon; MG).
- HEWLETT, GEOFFREY WILLIAM. 1979. *Selenium and tellurium – A review of the concentrations, geochemistry, economics and geology of some rare element enriched ores*. MSc [MG] (C.J. Dixon; MG).
- HIGGO, JENNIFER JOAN WYNNE. 1985. *Radionuclide sorption by marine sediments*. PhD (Cronan).
- HOLMAN, RONALD HERMAN CHARLES. 1956. *Applied geochemical studies in Uganda and Sierra Leone*. PhD (Webb).
- HOLMES, RICHARD. 1976. *The regional distribution of cadmium in England and Wales*. PhD (Howarth).
- HORDER, MICHAEL FRANCIS. 1979. *Geochemical investigations of deep sea sediments from the Indian Ocean*. PhD (Cronan).
- HOROWITZ, ARTHUR JOSEPH. 1974. *Geochemical investigations of sediments associated with the Mid-Atlantic Ridge*. PhD (Cronan).
- HORSNAIL, RICHARD FRANCIS. 1968. *The significance of some regional geochemical patterns in North Wales and South-west England*. PhD (Webb, Thornton & Nichol).
- HYDE, PAUL. 1981. *An investigation of the heavy metal contamination of the Preston-under-Scar area, Wensleydale, North Yorkshire*. MSc [ET] (Dr. G. R. Conway; ET).

- JACOBSON, JOHN DESMOND. 1956. *Trace element dispersion patterns related to mineralisation in Britain and Uganda*. PhD [MG] (Webb).
- JAMES, CLIFFORD HENRY. 1957. *Applied geochemical studies in Southern Rhodesia and Great Britain*. PhD (Webb).
- JAMES, LLOYD DAVID. 1965. *Regional geochemical reconnaissance in the northern and southern sections of the Sula Mountains schist belt, Sierra Leone*. PhD (Nichol & Tooms).
- JAY, JOHN RAYMOND. 1959. *Geochemical prospecting studies for cobalt and uranium in Northern Rhodesia*. PhD (Webb & Tooms).
- JENSEN, ROBERT ANDREW. 1980. *Geochemistry and removal of heavy metals in the River Hale, Cornwall*. MSc [ET] (Dr. D.R. Conway).
- JNAWALI, BHARAT MANI. 1979. *Regional geochemical mapping and data interpretation in the lesser Himalayas of central Nepal*. DIC (Hale & Howarth).
- JOHNSON, CAROLA ANNETTE. 1984. *The sources, dispersion and speciation of trace elements derived from acid mine drainage in the Carnon River and Restronguet Creek, Cornwall*. PhD (Thornton).
- JONES, DAVID JOHN WILLIAM. 1975. *Vapour phase geochemistry*. MSc [MG] (Boyle).
- JONES, TIMOTHY HUGH. 1982. *The determination of heavy metal status of selected garden soils and vegetables*. MSc [ET] (Thornton).
- JORDAN, WILLIAM JAMES. 1975. *The application of regional geochemical reconnaissance to arable cropping in England and Wales*. PhD (Thornton & Alloway).
- JUBELI, YOUSSEF MAAROUF. 1986. *Multielement geochemical reconnaissance for uranium in the Palmyrides Region of central Syria*. PhD (Hale & Howarth).
- KAEWBAIDHOON, SANGBO. 1961. *Geochemical dispersion of tin in soils and stream sediments in Malaya*. MSc [MG] (Webb & Tooms).
- KAGULE-MAGAMBO, JAMES EMANUEL. 1966. *Studies of the association of copper and cobalt with major elements*. DIC [MG] (Tooms).
- KEELEY, HELEN CHRISTINE MAUD. 1973. *Cobalt, copper and manganese in relation to geochemical reconnaissance and agriculture*. PhD (Thornton).
- KERBYSON, JOHN DONALD. 1960. *Application of spectrography to the study of secondary geochemical dispersion patterns related to mineral deposits in Africa and the Far East*. PhD (Webb).
- KHALEELI, JEFFREY. 1966. *The application of statistics to areally distributed data in economic geology*. MSc [MG] (C.J. Dixon).
- KHALEELI, JEFFREY. 1969. *The application of some data processing techniques in the interpretation of geochemical data*. PhD (Nichol & Howarth).
- KÖKSOY, MÜMIN. 1967. *Dispersion of mercury and other ore elements from mineral deposits in Turkey*. PhD (Tooms & Bradshaw).
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- LARSSON, JAN-OLA. 1970. *Mineralogical and geochemical studies in areas of blanket peat in western Ireland*. PhD (Nichol).
- LEAMAN, PETER WILLIAM. 1980. *The use of geochemistry in uranium exploration*. MSc [MG] (C.J. Dixon; MG).
- LEDWARD, RICHARD ANTHONY. 1960. *Geochemical prospecting studies for base metals in Tanganyika and Burma*. PhD [MG] (Webb & Tooms).
- LEE, JAE YEONG. 1964. *A discussion of the potential value of underwater mineral deposits and how they might be worked; and a review of factors controlling secondary chemical dispersion including their role in the planning and interpretation of geochemical prospecting survey; and the economic geology of Thailand and Indo-China*. DIC [MG] (Tooms).
- LEECH, ANNE FRANCES. 1984. *The application of regional geochemistry in determining the causes and predicted incidence of bovine hypocupraemia*. PhD (Thornton & Howarth).
- LEGGO, MICHAEL DAVID. 1970. *Further studies in mercury*. DIC (Meyer).
- LOVELL, JOHN STANLEY. 1979. *Applications of vapour geochemistry to mineral exploration*. PhD (Webb).
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- MANCEY, STEVEN JOHN. 1980. *Computer-based interpretation of large regional geochemical data sets*. PhD (Howarth).
- MANDER, IAN PHILIP. 1981. *An assessment of the sources of error in a hydrogeochemical survey of the Carnon River, Cornwall*. MSc [ET] (Prof. G.R. Conway; ET).
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- MATTHEWS, HILARY. 1982. *The distribution of cadmium and associated elements in the soil-plant system at sites in Britain contaminated by mining, smelting and metal-rich bedrock*. PhD (Thornton).
- MAURICE, YVON THÉODORE. 1973. *Geochemical interpretation of base metal enrichment in soils overlying Lower Carboniferous rocks near Dalnegan, County Offaly, Eire*. PhD (Meyer).
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- MILLMAN, ANTHONY PHILIP. 1953. *Theory and practice of geochemical prospecting – The results of investigation in the West of England and West Africa*. PhD [MG] (Webb).
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- MORGAN-JONES, MARTIN. 1983. *The natural hydrogeochemistry of the Lower Greensand of Hampshire and Surrey and its relationship to pollution: particularly from waste disposal activities*. PhD [external] (Thornton).
- MORRIS, ELIZABETH BRONWEN. 1978. *The leaching of heavy metals from mine spoil into a river system*. MSc [ET] (Thornton).
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- PETERS, RONALD GEORGE. 1974. *Secondary dispersion of sulphur from sulphide deposits in the Notre Dame Bay area, Newfoundland*. PhD (Meyer).
- PHILOBBOS, EMAD RAMZY. 1975. *Geochemical and mineralogical studies on some phosphate sediments from Egypt*. DIC (P.R. Bush; G).
- PROVAN, DONALD MALCOLM JAMIESON. 1965. *An investigation of the factors governing the distribution of savanna plant communities in northern Australia with particular reference to geology and bedrock mineralization*. PhD [Birmingham] (Dr. M. M. Cole [Bedford College], Webb & Tooms).
- RAMSEY, MICHAEL HENRY. 1986. *Improved performance of inductively coupled plasma atomic emission spectrometry in geochemical analysis*. PhD (Thompson).
- RANASINGHE, VERNON VICTOR CLEMENT. 1984. *The development of radiative neutron capture techniques for in-situ elemental analysis of the sea-bed*. PhD (Cronan & Dr. G. C. Clayton [Harwell]).
- REYNOLDS, BRIAN. 1981. *Geochemical studies on heavy metals in waters and sediments in Minsterly Brook, Shropshire, and the River Ecclesbourne, Derbyshire*. PhD (Thornton & Thorne).
- RUBIO ALVAREZ, ALBERTO. 1967. *Geochemical prospecting studies in Flintshire; and a geophysical survey of the Perran iron lode, Cornwall*. DIC [MG] (Nichol).
- RUGHEIM, MOHAMMED EL HASSAN. 1970. *Preliminary study of regional metal variations in Red Sea sediments related to hot brine occurrences*. DIC (Tooms).
- RUSSELL, KEITH JAMES. 1988. *Soil ingestion by sheep in England and Wales and its contribution to the dietary intake of trace elements*. PhD (Thornton).
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- SANDERS, LESLEY JEAN. 1977. *The combined use of soil survey and geochemical reconnaissance data to study the distribution of trace elements in soils*. PhD (Thornton).
- SCHIEFLER, DONALD. 1967. *Some aspects of the regional geochemistry of the Lunga Basin area, Zambia*. PhD (Tooms & Nichol).
- SENARATNE, ATULA. 1982. *Geochemical cycling of thallium in the environment*. MSc [ET] (Dr. J. N. B. Bell; ET).
- SEY, SOLOMON KWESI. 1981. *Factors affecting trace metal distribution in stream sediments in selected areas of base metal mineralization in Lancashire and Cornwall*. MPhil (Hale).
- SHEARME, SARAH. 1982. *The geochemistry of sediments from the Atlantic and Pacific Oceans*. PhD (Cronan).
- SIMS, ANDREW. 1982. *Geochemical prospecting in the search for metalliferous ore deposits in hot arid terrain*. MSc [MG] (?).
- SKIRROW, RUSSELL. 1983. *A geochemical study of hydrothermal and associated sediments from the Eastern Pacific spreading centres*. PhD (Cronan).
- SMITH, CHRISTOPHER ARNOLD. 1983. *The distribution of selenium in some soils developed on Silurian, Carboniferous and Cretaceous systems in England and Wales*. PhD (Thornton).
- SMITH, PETER ADRIAN. 1979. *Geochemical investigations of Recent sediments from the Aegean Sea*. PhD (Cronan).
- STAGG, RALPH NICHOLAS. 1977. *Geochemical prospecting in Malawi*. MSc [MG] (Howarth).
- STANTON, RONALD ERNEST. 1959. *A field method for the determination of antimony in soils*. DIC (?Dr. A.J.E. Welch [Chemistry]).
- STERN, JOHN EDWARD. 1959. *A statistical problem in geochemical prospecting*. MSc [S] (Dr. T. Barnard [Mathematics] & Tooms).
- SUMMERHAYES, COLIN PETER. 1971. *Phosphate deposits on the north west African continental shelf and slope*. PhD (Tooms).
- SWARBRICK, ZELDA ANNE. 1980. *The distribution of cadmium and associated elements within selected profiles at Shipham, Somerset*. MSc [ET] (Thornton).
- TAVORA, FLÁVIO JUAREZ. 1987. *Litho-geochemistry and surficial redistribution of arsenic, antimony, bismuth, selenium and tellurium associated with mineral deposits in sub-tropical areas of Brazil*. PhD (Hale).
- TAYLOR, DENNIS. 1968. *The interpretation of lead-zinc stream sediment anomalies related to contamination and mineralization in the United Kingdom*. PhD (Nichol & Webb).
- THOMSON, IAN. 1971. *Regional geochemical studies of black shale facies with particular reference to trace element disorders in animals*. PhD (Thornton & Webb).
- THORNTON, IAIN. 1968. *The application of regional geochemical reconnaissance to agricultural problems*. PhD (Webb).
- TILLSON, JOHN WILLIAM. 1982. *MINEX – A computer model to teach mineral exploration using controlled requirement specification (CORE)*. MSc [CS] (Prof. S.J. Goldsack; CS).
- TOOMS, JOHN SOMERVILLE. 1955. *Geochemical dispersion related to copper mineralization in Northern Rhodesia*. PhD (Webb).
- TURNER, MARK ST. JOHN. 1980. *A comparative study of multiple regression techniques in geochemistry*. MSc [MG] (Howarth).
- TURNER, MARK ST. JOHN. 1987. *Statistical analysis of geochemical data illustrated by reference to the Dalradian of N[orth]-E[ast] Scotland*. PhD (Howarth & Hale).
- URQUIDI-BARRAU, [JORGE] FERNANDO. 1973. *Regional geochemical variations related to base metal mineralization in Wales*. PhD (Meyer).
- VARNAVAS, SOTERIOS PETROU. 1979. *Geochemical investigations on sediments from the Eastern Pacific*. PhD (Cronan).
- VENUGOPAL, KALLAT. 1952. *Trace elements in cassiterite and stannite*. PhD [MG] (Webb).
- VERLAAN, PHILOMEME. 2003. *Environmental controls on marine ferromanganese oxide behaviour in the Central South Pacific*. PhD (Cronan).
- VIEWING, KEITH ALAN. 1963. *Regional geochemical patterns related to mineralization in central Sierra Leone, Nichol*. PhD (Tooms & Webb).
- WALKER, JOHN LEIPER. 1964. *Primary geochemical dispersion in relation to the mineralization at Broken Hill, New South Wales*. PhD (Webb).
- WALKER, PETER BARTLETT. 1960. *A study of the secondary dispersion of copper and chromium from mineral deposits in North Borneo*. MSc (Webb & Tooms).
- WATLING, HELEN RUTH. 1975. *Some aspects of trace element analysis of river and estuarine sediments and waters*. DIC (Thornton).
- WATLING, ROGER JOHN. 1972. *Mercury and associated trace elements in the primary environment, Keele prospect, County Longford, Ireland*. PhD (Meyer).
- WATTS, JOHN TREVOR. 1960. *The secondary dispersion of niobium from pyrochlore carbonatites in the Feira District, Northern Rhodesia*. PhD (Webb & Tooms).
- WHEATLEY, MICHAEL ROBERT. 1984. *The laser-ICP microprobe and other techniques applied to the study of pathfinder elements in fluvial systems*. PhD (Hale).
- WHITING, CAROLE. 1978. *A study of metal concentrations in the River Hale, Cornwall*. MSc [ET] (Thornton).
- WIGHAN, HELEN. 1978. *Heavy metal uptake by different plant species in an area of past metalliferous mining and smelting*. MSc [ET] (Thornton).
- WILDING, IAN GEORGE PROCTOR. 1966. *Investigation of the secondary dispersion of nickel in Rhodesia and Zambia*. PhD (Tooms).
- WILLIAMS, CAROLYN. 1970. *Biogeochemical factors influencing plant uptake of molybdenum and selenium*. MPhil (Thornton & Webb).
- WOOD, GEOFFREY ARTHUR. 1958. *Studies on rapid analytical methods [for Sn and Sb] for use in geochemical prospecting*. PhD (Dr. A.J.E. Welch [Chemistry] & Webb).
- WOOD, PAULINE. 1975. *Regional geochemical studies in relation to agriculture in areas underlain by sandstones*. PhD (Thornton & Alloway).
- WRAITH, DIANNE ELIZABETH. 1982. *The natural distribution of some Group Va and VIa elements as applied to mineral exploration*. PhD (Hale).
- YIM, WYSS WAI-SHU. 1974. *Some aspects of the geochemistry of tin and other elements in sediments off north Cornwall*. MPhil (Cronan).
- YOUNG, ROBERT DOUGLAS. 1971. *The interpretation of regional geochemical patterns in Northern Ireland*. PhD (Lowenstein).
- ZHOU, JIAXIN. 1985. *Geochemistry of Kimelford intrusives, West Scotland, in relation to the Caledonian orogeny*. PhD (Howarth & Prof. J.V. Watson [Geology]).
- ZOHAR, ELIAHU. 1965. *The application of geochemical methods to prospecting for copper and arsenical-gold deposits in Guadalcanal, British Solomon Islands*. MSc (James & Tooms).

Appendix 4. GPRC/AGRGR staff members

Analysts

Campain, Richard Phillips, 1969–85; Crundwell, Miss Norah Jane, 1954–55; Denison, Miss B.A., 1959–60; Hall, Miss R.A., ?1959; Read [née Symmonds], Mrs Kyrene, 1956–57; Wood, Geoffrey Arthur, 1954–57.

Analytical Experimental Officer

Clavering, Miss Bonamy Jane, 1969; Cole, Mrs Anna Georgina, 1965–67; Doyle, Alban, 1969–88; Eldred, Brian David, 1963; Forster, Alan, 1967–70; Forward, Trevor John, 1963–65; Guise, Philip George, 1969–72; Harman, Miss Barbara Louise Moira, 1965; Harris, Graham Jack Seymour, 1969–70; Lewis, Miss Wendy Elaine, 1960–63; Sheikh, Gulham Rasool, 1970–72; Stott, Michael A., 1969–72; Thomas, Clifford Fitzroy Macleod, 1967–72; Viewing [née Bierling], Mrs Frouwka, 1959–62; Williams, David Edward Gerrard, 1963–65.

[Analytical] Research Officer

Lam Shang Leen, K.C.Y. 1969–72; Wood, Dr. Shirley Janet, 1977–79.

Academic staff

Barringer, Prof. Anthony R., Visiting Prof., 1965–84; Boyle, Dr. Daniel Robert (1948–2000), 1971–76; Bradshaw, Dr. Peter Martin Devenish, 1965–69; Cronan, Prof. David Spencer, 1973–; Culbard, Dr. Elizabeth Brandon, 1980–86; Hale, Dr. Martin, 1976–83; Assistant Director, Geology Department 1984–90; Howarth, Dr. Richard John, 1968–85; Lowenstein, Dr. Peter Leslie, 1969–73; Meyer, Dr. William Timothy Wakeford, 1969–74; Nichol, Dr. Ian, 1961–69; Ramsey, Dr. Michael Henry, 1979–99; Thompson, Dr. Michael, 1969–87; Thornton, Prof. Iain, 1964–74; Asst. Head AGRG, 1974–79; Head, 1979–88; Director, Environmental Geochemistry Research Group, 1988–; Chairman, IC Centre for Environmental Technology 1986–90; Director, Global Environmental Research Centre 1990–94; Tooms, Dr. John Somerville, 1955–72; Webb, Prof. John Stuart (1920–2007), Lecturer [Mining Geology] 1947–55; Director GPRC/AGRGR 1954–79; Sr. Research Fellow, 1979–88.

Research Assistant

Abrahams, Peter W., 1980–83; Bicknell, Mrs Jill Valerie, 1961–68; Brebner, Miss Jocelyn, 1985–86; Brereton, Miss Dorothy Ann, 1971–72; Cole, Tomas, 1983–87; Coles, Barry J, 1981–; Elderfield, Henry (“Harry”), 1968–69; Fielder, Miss Nicola A.,

1979–80; Gilbert, Miss Margaret A. (“Peggy”) (1928–96), 1953–57; Goulter, John Edward, 1975–76; Halcrow, William, 1971–72; Henderson-Hamilton, Leslie James Campbell, 1961–65; Higgo, Miss Jennifer Joan Wynne, (Chemistry), 1981–87; Higgs, J, 1981–82; Hodgkinson, Richard A., 1986–96; Horowitz, Arthur Joseph, 1971–74; Hunt, Andrew, 1986–89; Jones, David John William, Programmer analyst, 1983–84; Jordan, William James, 1971–73; Jorisi, E, 1978–83; Kerbyson, John Donald, 1957–60; Lovell, John Stanley, 1974–79; Lowry, Dr. Richard K., 1979–81; Mather, Alfred Lewis, 1958–60; McDonald [Mrs. Hardwick from 1967], Mrs Alison Jean, 1957–67; Moon, Charles J, 1980–82; Moorby, Dr. Stewart Anthony, 1979–86; Moorcroft, J. Stephen, 1979–83; Oakes, Barry W., 1980–83; Pahlavanpour, Dr. Behrooz, 1979–82; Poynter, Miss Daphne Ann, 1959–61; Rother, Dr. John A., (joint w. Botany), 1977–80; Sarkar, Dr. Shoudrop Lai, (Metallurgy), 1971–72, 1979; Shearme [later Mrs. Colley], Miss Sarah, 1980–81; Steward, Miss Angela Mary Carr, 1969–73; Summerhayes, Dr. Colin Peter, 1967–70; Thomas, Miss Rosemary Grace, 1960–61; Thompson, Anthony John, EO; Sr AT, 1962–77; Thoresby, Miss Pandora A., 1973–76; van Dorst, Miss Sheila Helena, 1984–87; Vivian, Christopher Martin Grose, 1975–76; Walton, Steven Jeremy, 1973–79; Watling, John, ?1971–73; Watt, John Michael, 1979–86; Wheatley, Michael, 1979–85.

Research Fellow

Alloway, Dr. Brian John, 1969–75; Aston, Simon Robert, 1972–74; Boyden, Dr. Charles Richard (1945–79), 1972–75;

Foster, John Robert, 1965–69; James, Dr. Clifford Henry (1931–2003), 1961–64; Kinniburgh, Dr. David George, 1975–78; Leggo, Michael David, Academic visitor, 1968–69; Newman, Ernest James, 1966–68; Stanton, Ronald Ernest (1919–79), 1956–68.

Technician/technical assistant

Ahmad, Anwar, 1969–87; Ahmad, M.A., 1969–96; Auld, Miss Heather A., 1974–78; Banerjee, Mrs Eva K., 1965–92; Brooks, Miss Karen, 1979–80; Clemens, Mrs Maeve Jill, 1969–73; Cooper, J.B., 1977–78; Downes, Leslie, 1967–73; Forman, T., 1964–65; Fortey, John Edward, 1973–77; Gay, Miss Carol E.F., 1976–83; Harper, Martin, 1982–83; Heeley, Ms Judy Lynne, 1980–88; Hin, Mrs Ella Ng Chieng, 1968–71; Holden, Miss J. E., 1963–65; Howell, Miss Vanessa J., 1980; Johnson, Christopher, 1979–80; Kalsi, Amarjit, 1980; Langston, Miss P., 1958; Little, Miss Mary, ?1966–69; Murphy, Marion P., 1979–83; Muttiah, Miss Padma V., 1974–80; Nataraj, Mrs. Rebathi, 1971–74; Nicholls, Miss A., 1965; Robbins, Miss J. E., 1984–85; Rundle, Miss Stella Ann, 1976–79; Russell-Tanska (nee Sinclair-Gribble), Mrs Krystyna, 1982–83; Shariff, Mrs Farida, 1968–69; Theodoran, Theo, 1987–88; Thomas, Mrs Janet M., 1979–80; Turnbull, Miss Molly E., ?1969; Vernon, Miss Anne Primrose, 1977–79; Vine, Mrs Rose Violet, 1956–77; Williams, R.O., 1972–77.