

British Antarctic Survey publications 2005

Publications are listed by programme

** = NERC employees who are not BAS staff
++ = collaborators in UK universities
%% = collaborators in the UK non-university public sector
= overseas collaborators
\$\$ = commercial sector collaborators

Q3 programmes

Signals in Antarctica of Past Global Changes

Refereed research papers 2005 listed in ISI database

ALLEN C.S., PIKE J.++, **PUDSEY C.J.** & LEVENTER A.## 2005. Submillennial variations in ocean conditions during deglaciation based on diatom assemblages from the southwest Atlantic. *Paleoceanography*, **20**, PA2012, doi:10.1029/2004PA001055, 16p.

BENTLEY M.J.++, **HODGSON D.A.**, **SMITH J.A.** & COX N.J.++ 2005. Relative sea level curves for the South Shetlands and Marguerite Bay regions, Antarctic Peninsula. *Quaternary Science Reviews*, **24**, 1203-1216.

BENTLEY M.J.++, **HODGSON D.A.**, SUGDEN D.E.++, **ROBERTS S.J.**, SMITH J.A.++, LENG M.J.** & BRYANT C.** 2005. Early Holocene retreat of George VI Ice Shelf, Antarctic Peninsula. *Geology*, **33**, No. 3, 173-176.

EVANS J., **PUDSEY C.J.**, Ó COFAIGH C.++, **MORRIS P.** & DOMACK E.W.## 2005. Late Quaternary glacial history, flow dynamics and sedimentation along the eastern margin of the Antarctic Peninsula Ice Sheet. *Quaternary Science Reviews*, **24**, 741-774.

HODGSON D.A. & **CONVEY P.** 2005. A 7000-year record of oribatid mite communities on a maritime-Antarctic island: responses to climate change. *Arctic, Antarctic, and Alpine Research*, **37**, No. 2, 239-245.

HODGSON D.A., VERLEYEN E.##, SABBE K.##, SQUIER A.H.++, KEELY B.J.++, LENG M.**, SAUNDERS K.M.## & VYVERMAN W.## 2005. Late Quaternary climate-driven environmental change in the Larsemann Hills, East Antarctica, multi-proxy evidence from a lake sediment core. *Quaternary Research*, **64**, No. 1, 83-99.

HODGSON D.A., VYVERMAN W.##, VERLEYEN E.##, LEAVITT P.R.##, SABBE K.##, SQUIER A.H.++ & KEELY B.J.++ 2005. Late Pleistocene record of elevated UV radiation in an Antarctic lake. *Earth and Planetary Science Letters*, **236**, No. 3-4, 765-772.

KARLÖF L.##, ISAKSSON E.##, WINTHER J.-G.##, GUNDESTRUP N.##, MEIJER H.A.J.## **MULVANEY R.**, POURCHET M.##, HOFSTEDE C.M.##, LAPPEGARD G.##, PETTERSSON R.## & VAN DEN BROEKE M.R.##, VAN DE WAL R.S.W.## 2005. Accumulation variability over a small area in east Dronning Maud Land, Antarctica, as determined from shallow firn cores and snow pits: some implications for ice-core records. *Journal of Glaciology*, **51**, No. 174, 343-352.

KEKONEN T.##, MOORE J.C.##, PERÄMÄKI P.##, **MULVANEY R.**, ISAKSSON E.##, POHJOLA V.## & VAN DE WAL R.S.W.## 2005. The 800 year long ion record from the Lomonosovfonna (Svalbard) ice core. *Journal of Geophysical Research*, **110**, No. D7, D07304, doi:10.1029/2004JD005223, 11p.

Ó COFAIGH C.++, DOWDESWELL J.A.++, **ALLEN C.S.**, HIEMSTRA J.++, **PUDSEY C.J.**, EVANS J.++ & EVANS D.J.A.++ 2005. Flow dynamics and till genesis associated with a marine-based Antarctic palaeo-ice stream. *Quaternary Science Reviews*, **24**, 709-740.

SQUIER A.H.++, **HODGSON D.A.** & KEELY B.J.++ 2005. Evidence of late Quaternary environmental change in a continental east Antarctic lake from lacustrine sedimentary pigment distributions. *Antarctic Science*, **17**, No. 3, 361-376.

VERLEYEN E.##, **HODGSON D.A.**, SABBE K.## & VYVERMAN W.## 2005. Late Holocene changes in ultraviolet radiation penetration recorded in an East Antarctic lake. *Journal of Paleolimnology*, **34**, 191-202.

VERLEYEN E.##, **HODGSON D.A.**, MILNE G.A.++, SABBE K.## & VYVERMAN W.## 2005. Relative sea-level history from the Lambert Glacier region, East Antarctica, and its relation to deglaciation and Holocene glacier readvance. *Quaternary Research*, **63**, No. 1, 45-52.

WILSON M.A.++, **HODGSON D.A.** & KEELY B.J.++ 2005. Atmospheric pressure chemical ionisation liquid chromatography/multistage mass spectrometry for assignment of sedimentary bacteriochlorophyll derivatives. *Rapid Communications in Mass Spectrometry*, **19**, 38-46.

WOLFF E.W., **COOK E.**, **BARNES P.R.F.**, **MULVANEY R.** 2005. Signal variability in replicate ice cores. *Journal of Glaciology*, **51**, No. 174, 462-468.

Refereed research papers 2005 NOT listed in ISI database

SCHMOKER C.##, TATON A.##, BALTHASART P.##, GRUBISIC S.##, **HODGSON D.A.** & WILMOTTE A.## 2005. Which cyanobacterial genotypes are observed in microbial mats of Antarctic lakes? *Terra Antarctica Reports*, No. 11, 51-56.

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WOLFF E.W. 2005. Frozen in time. *Chemistry Review*, **15**, No. 1, 2-6.

WOLFF E.W. & MILLER H.## 2005. The European Project for Ice Coring in Antarctica (EPICA). *EGGS: Newsletter and Information Service of the E.G.U.*, No. 11, 12-15.

Global Interactions of the Antarctic Ice Sheet

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KING M.A.++, PENNA N.T.++, CLARKE P.J.++ & KING E.C. 2005. Validation of ocean tide models around Antarctica using onshore GPS and gravity data. *Journal of Geophysical Research*, **110**, No. B8, B08401, doi:10.1029/2004JB003390, 21p.

KRISTJÁNSSON L.##, GUDMUNDSSON M.T.##, SMELLIE J.L., McINTOSH W.C.## & ESSER R.## 2005. Palaeomagnetic, $^{40}\text{Ar}/^{39}\text{Ar}$, and stratigraphical correlation of Miocene - Pliocene basalts in the Brandy Bay area, James Ross Island, Antarctica. *Antarctic Science*, **17**, No. 3, 409-417.

PATRICK M.R.##, SMELLIE J.L., HARRIS A.J.L.##, WRIGHT R.##, DEAN K.##, IZBEKOV P.##, GARBEIL H.## & PILGER E.## 2005. First recorded eruption of Mount Belinda volcano (Montagu Island), South Sandwich Islands. *Bulletin of Volcanology*, **67**, 415-422.

PRITCHARD H., MURRAY T.++, LUCKMAN A.++, STROZZI T.++ & BARR S.++ 2005. Glacier surge dynamics of Sortebrae, East Greenland, from Synthetic Aperture Radar feature tracking. *Journal of Geophysical Research*, **110**, No. F3, F03005, doi:10.1029/JF000233, 13p.

RAYMOND M.J.## & GUDMUNDSSON G.H. 2005. On the relationship between surface and basal properties on glaciers, ice sheets, and ice streams. *Journal of Geophysical Research*, **110**, No. B8, B08411, doi:10.1029/2005JB0033681, 17p.

RIGNOT E.##, CASASSA G.##, GOGINENI S.##, KANAGARATNAM P.##, KRABILL W.##, PRITCHARD H., RIVERA A.##, THOMAS R.## & VAUGHAN D.G. 2005. Recent ice loss from the Fleming and other glaciers, Wordie Bay, west Antarctic Peninsula. *Geophysical Research Letters*, **32**, No. 7, L07502, doi:10.1029/2004GL021947, 4p.

VAUGHAN D.G. 2005. How does the Antarctic ice sheet affect sea level rise? *Science*, **308**, No. 5730, 1877-1878.

Unrefereed publications

MAKINSON K., SCHRÖDER M.## & ØSTERHUS S.## 2005. Seasonal stratification and tidal current profiles along Ronne Ice Front. *Forum for Research into Ice Shelf Processes (FRISP) Report*, No. 16, 59-65.

SMEDSRUD L.H.##, **JENKINS A.**, HOLLAND D.M.## & NØST O.A.## 2005. Ocean processes below Fimbulisen - modelling results. *Forum for Research into Ice Shelf Processes (FRISP) Report*, No. 16, 43-51.

Antarctic Climate Processes

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ANDERSON P.S. 2005. Ice-shelf microtopography observed using satellite thermal imagery. *Journal of Glaciology*, **51**, No. 175, 528-538.

ANDERSON P.S., LADKIN R.S. & RENFREW I.A. 2005. An autonomous Doppler Sodar wind profiling system. *Journal of Atmospheric and Oceanic Technology*, **22**, No. 9, 1309-1325.

CONNOLLEY W.M. 2005. Sea ice concentrations in the Weddell Sea: a comparison of SSM/I ULS and GCM data. *Geophysical Research Letters*, **32**, No. 7, L07501, doi:10.1029/2004GL021898, 4p.

LACHLAN-COPE T.A. 2005. The role of sea ice in forcing the winter climate of Antarctica in a global climate model. *Journal of Geophysical Research*, **110**, No. D3, D03110, doi:10.1029/2004JD004935, 8p.

MEREDITH M.P. & KING J.C. 2005. Rapid climate change in the ocean to the west of the Antarctic Peninsula during the second half of the 20th century. *Geophysical Research Letters*, **32**, No. 19, L19604, doi:10.1029/2005GL02042, 5p.

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TURNER J., LACHLAN-COPE T.A., COLWELL S.R. & MARSHALL G.J. 2005. A positive trend in western Antarctic Peninsula precipitation over the last 50 years reflecting regional and Antarctic-wide atmospheric circulation changes. *Annals of Glaciology*, **41**, 85-91.

YU Y.++, CAI M.++, **KING J.C. & RENFREW I.A.** 2005. Numerical simulations of katabatic jumps in Coats Land, Antarctica. *Boundary-Layer Meteorology*, **114**, No. 2, 413-437.

Refereed research papers 2005 NOT listed in ISI database

TURNER J. 2005. Aspects of modern Antarctic meteorology and climatology. *Archives of Natural History*, **32**, Pt. 2, 334-345.

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TURNER J. 2005. Antarctic and tropical interactions. (In Shau-Hwai, A.T., Yasin, Z., & Mansor, M., eds. *Antarctica: global laboratory for scientific and international cooperation. Proceedings of the 2nd Malaysian International Seminar on Antarctica, Penang, May 2004*. n.pl, Academy of Sciences Malaysia, 57-62.)

Magnetic Reconnection, Substorms and their Consequences

Refereed research papers 2005 listed in ISI database

ABEL G.A., FREEMAN M.P. & CHISHAM G. 2005. Comment on "Location of the reconnection line for northward interplanetary magnetic field" by K.J. Trattner, S.A. Fuselier, and S.M. Petrinec. *Journal of Geophysical Research*, **110**, No. A10, A10208, doi:10.1029/2004JA10973, 2p.

CHAPMAN S.C.++, ROWLANDS G.++ & **WATKINS N.W.** 2005. Scaling and commonality in anomalous fluctuation statistics in models for turbulence and ferromagnetism. *Journal of Physics A: Mathematical and General*, **38**, 2289-2297.

CHAPMAN S.C.++, HNAT B.++, ROWLANDS G.++ & **WATKINS N.W.** 2005. Scaling collapse and structure functions: identifying self-affinity in finite length time series. *Nonlinear Processes in Geophysics*, **12**, 767-774.

CHISHAM G. 2005. New proxy for reconnection. *Astronomy and Geophysics*, **46**, No. 4, 23.

CHISHAM G., FREEMAN M.P., LAM M.M., ABEL G.A., SOTIRELIS T.##, GREENWALD R.A.## & LESTER M.++ 2005. A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the afternoon sector ionosphere. *Annales Geophysicae*, **23**, No. 12, 3645-3654.

CHISHAM G., FREEMAN M.P., SOTIRELIS T.## & GREENWALD R.A.## 2005. The accuracy of using the spectral width boundary measured in off-meridional

SuperDARN HF radar beams as a proxy for the open-closed field line boundary. *Annales Geophysicae*, **23**, No. 7, 2599-2604.

CHISHAM G., FREEMAN M.P., SOTIRELIS T.##, GREENWALD R.A.##, LESTER M.++ & VILLAIN J.-P.## 2005. A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the morning sector ionosphere. *Annales Geophysicae*, **23**, No. 3, 733-743.

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HORNE R.B., THORNE R.M.##, GLAUERT S.A., ALBERT J.M.##, MEREDITH N.P.++ & ANDERSON R.R.## 2005. Timescale for radiation belt electron acceleration by whistler mode chorus waves. *Journal of Geophysical Research*, **110**, No. A3, A03225, doi:10.1029/2004JA010811, 10p.

PARKINSON M.L.##, PINNOCK M., DYSON P.L.## & DEVLIN J.C.## 2005. Signatures of the nightside open-closed magnetic field-line boundary during moderately disturbed conditions and ionospheric substorms. *Advances in Space Research*, **36**, No. 10, 1791-1796.

PARKINSON M.L.##, PINNOCK M., WILD J.A.++, LESTER M.++, YEOMAN T.K.++, MILAN S.E.++, YE H.##, DEVLIN J.C.##, FREY H.U.## & KIKUCHI T.## 2005. Interhemispheric asymmetries in the occurrence of magnetically conjugate sub-auroral polarisation streams. *Annales Geophysicae*, **23**, No. 4, 1371-1390.

THORNE R.M.##, O'BRIEN T.P.##, SHPRITS Y.Y.##, SUMMERS D.## & HORNE R.B. 2005. Timescale for MeV electron microburst loss during geomagnetic storms. *Journal of Geophysical Research*, **110**, No. A9, A09202, doi:10.1029/2004JA010882, 7p.

WATKINS N.W., CREDGINGTON D., HNAT B.++, CHAPMAN S.C.++, FREEMAN M.P. & GREENHOUGH J.++ 2005. Towards synthesis of solar wind and geomagnetic scaling exponents: a fractional Lévy motion model. *Space Science Reviews*, **121**, No. 1-4, 271-284.

Book chapters

THORNE R.M.##, HORNE R.B., GLAUERT S.A., MEREDITH N.P., SHPRITS Y.Y.##, SUMMERS D.## & ANDERSON R.R.## 2005. The influence of wave-

particle interactions on relativistic electron dynamics during storms. (In James, M.S., Burch, L. & Spence, H., eds. Inner magnetosphere interactions: new perspectives from imaging. *Geophysical Monographs*, vol. 159. Washington, D.C., American Geophysical Union, 101-112.)

Geospace Atmosphere Transfer Functions

Refereed research papers 2005 listed in ISI database

CLILVERD M.A., CLARKE E.** , Ulich T.##, LINTHE J.## & RISHBETH H.## 2005. Reconstructing the long-term *aa* index. *Journal of Geophysical Research*, **110**, No. A7, A07205, doi:10.1029/2004JA010762, 7p.

CLILVERD M.A., RODGER C.J.##, Ulich T.##, SEPPÄLÄ M.##, TURUNEN E.##, BOTMAN A.## & THOMSON N.R.## 2005. Modeling a large solar proton event in the southern polar atmosphere. *Journal of Geophysical Research*, **110**, No. A9, A09307, doi:10.1029/2004JA010922, 7p.

DIETRICH J.C., **NOTT G.J.**, **ESPY P.J.**, SWENSON G.R.##, CHU X.##, TAYLOR M.J.##, RIGGIN D.M.## & FRITTS D.C.## 2005. High frequency atmospheric gravity-wave properties using Fe-lidar and OH-imager observations. *Geophysical Research Letters*, **32**, No. 9, L09801, doi:10.1029/2004GL021944, 4p.

ESPY P.J., **HIBBINS R.E.**, RIGGIN D.M.## & FRITTS D.C.## 2005. Mesospheric planetary waves over Antarctica during 2002. *Geophysical Research Letters*, **32**, No. 21, L21804, doi:10.1029/2005GL023886, 4p.

FORKMAN P.##, ERIKSSON P.##, MURTAGH D.## & **ESPY P.J.** 2005. Observing the vertical branch of the mesospheric circulation at latitude 60°N using ground-based measurements of CO and H₂O. *Journal of Geophysical Research*, **110**, No. D5, D05107, doi:10.1029/2004JD004916, 11p.

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HIBBINS R.E., **SHANKLIN J.D.**, **ESPY P.J.**, **JARVIS M.J.**, RIGGIN D.M.##, FRITTS D.C.## & LÜBKEN F.-J. 2005. Seasonal variations in the horizontal wind structure from 0-100 km above Rothera station, Antarctica (67°S 68°W). *Atmospheric Chemistry and Physics*, **5**, 2973-2980.

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JARVIS M.J., CLILVERD M.A., ROSE M.C. & RODWELL S. 2005. Polar mesospheric summer echoes (PMSE) at Halley (76°S 27°W), Antarctica. *Geophysical Research Letters*, **32**, No. 6, L06816, doi:10.1029/2004GL021804, 5p.

PALO S.E.##, FORBES J.M.##, ZHANG X.##, RUSSELL J.M.##, MERTENS C.J.##, MLYNCZAK M.G.##, BURNS G.B.##, **ESPY P.J.** & KAWAHARA T.D.## 2005. Planetary wave coupling from the stratosphere to the thermosphere during the 2002 Southern Hemisphere pre-stratwarm period. *Geophysical Research Letters*, **32**, No. 23, L23809, doi:10.1029/2005GL024298, 5p.

RODGER C.J.##, **CLILVERD M.A.**, THOMSON N.R.##, NUNN D.++ & LICHTENBERGER J.## 2005. Lightning driven inner radiation belt energy deposition into the atmosphere: regional and global estimates. *Annales Geophysicae*, **23**, No. 11, 3419-3430.

ROSE M.C., CLILVERD M.A., JARVIS M.J. & RODWELL S. 2005. Polar mesosphere summer echo detection using a dynasonde. *Radio Science*, **40**, No. 6, RS6003, doi:10.1029/2005RS003249, 7p.

SISKIND D.E.##, COY L.## & **ESPY P.J.** 2005. Observations of stratospheric warmings and mesospheric coolings by the TIMED SABER instrument. *Geophysical Research Letters*, **32**, No. 9, L09804, doi:10.1029/2005GL022399, 4p.

THOMSON N.R.##, RODGER C.J.## & **CLILVERD M.A.** 2005. Large solar flares and their ionospheric D region enhancements. *Journal of Geophysical Research*, **110**, No. A6, A06306, doi:10.1029/2005JA011008, 10p.

VERRONEN P.T.##, SEPPÄLÄ A.##, **CLILVERD M.A.**, RODGER C.J.##, KYRÖLÄ E.##, ENELL C.-F.##, Ulich T.## & TURUNEN E.## 2005. Diurnal variation of ozone depletion during the October-November 2003 solar proton events. *Journal of Geophysical Research*, **110**, No. A9, A09S32, doi:10.1029/2004JA010932, 12p.

Antarctica in the Dynamic Global Plate System

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EAGLES G.##, **LIVERMORE R.A.**, FAIRHEAD J.D.++ & **MORRIS P.** 2005. Tectonic evolution of the west Scotia Sea. *Journal of Geophysical Research*, **110**, No. B2, B02401, doi:10.1029/2004JB003154, 19p.

FERRACCIOLI F., JONES P.C., CURTIS M.L. & LEAT P.T. 2005. Subglacial imprints of early Gondwana break-up as identified from high resolution aerogeophysical data over western Dronning Maud Land, East Antarctica. *Terra Nova*, **17**, 573-579.

FERRACCIOLI F., JONES P.C., CURTIS M.L., LEAT P.T. & RILEY T.R. 2005. Tectonic and magmatic patterns in the Jutulstraumen rift (?) region, East Antarctica, as imaged by high-resolution aeromagnetic data. *Earth, Planets and Space*, **57**, 767-780.

HUNTER M.A., CANTRILL D.J.##, FLOWERDEW M.J. & MILLAR I.L.** 2005. Mid-Jurassic age for the Botany Bay Group: implications for Weddell Sea Basin creation and southern hemisphere biostratigraphy. *Journal of the Geological Society*, **162**, Pt. 5, 745-748.

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THOMPSON R.N.++, OTTLEY C.J.++, SMITH P.M.##, PEARSON D.G.++, DICKIN A.P.##, MORRISON M.A.%%, **LEAT P.T.** & GIBSON S.A.++ 2005. Source of the Quaternary alkalic basalts picrites and basanites of the Potrillo Volcanic Field New Mexico USA: lithosphere or convecting mantle? *Journal of Petrology*, **46**, No. 8, 1603-1643.

WILLAN R.C.R. & HUNTER M.A. 2005. Basin evolution during the transition from continental breakup to subduction: evidence from the lithofacies and modal petrology of the Jurassic Latady Formation, Antarctic Peninsula. *Journal of South American Earth Sciences*, **20**, No. 3, 171-191.

ZEH A.##, GERDES A.##, WILL T.M.## & **MILLAR I.L.** 2005. Provenance and magmatic-metamorphic evolution of a Variscan island-arc complex: constraints from U-Pb dating, petrology, and geospeedometry of the Kyffhäuser crystalline complex, central Germany. *Journal of Petrology*, **46**, No. 7, 1393-1420.

Refereed research papers 2005 NOT listed in ISI database

THOMSON M.R.A.++ & **VAUGHAN A.P.M.** 2005. The role of Antarctica in the development of plate tectonic theories: from Scott to the present. *Archives of Natural History*, **32**, Pt. 2, 362-393.

Books edited

VAUGHAN A.P.M., LEAT P.T. & PANKHURST R.J.**, eds. 2005. Terrane processes at the margins of Gondwana. *Geological Society of London special publication*; 246. London, Geological Society, 446p.

Book chapters

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LEAT P.T., DEAN A., MILLAR I.L., KELLEY S.P.++, VAUGHAN A.P.M. & RILEY T.R. 2005. Lithospheric mantle domains beneath Antarctica. (In Vaughan, A.P.M., Leat, P.T. & Pankhurst, R.J., eds. Terrane processes at the margins of Gondwana. *Geological Society of London special publication*, 246. London, Geological Society, 359-380.)

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VAUGHAN A.P.M., LEAT P.T. & PANKHURST R.J.** 2005. Terrane processes at the margins of Gondwana: introduction. (In Vaughan, A.P.M., Leat, P.T. & Pankhurst, R.J., eds. Terrane processes at the margins of Gondwana. *Geological Society of London special publication*, 246. London, Geological Society, 1-21.)

Unrefereed publications

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Antarctic Biodiversity: Past, Present and Future

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ABOIM M.A.**, MENEZES G.M.##, SCHLITT T. & ROGERS A.D. 2005. Genetic structure and history of populations of the deep-sea fish *Helicolenus dactylopterus* (Delaroche 1809) inferred from mtDNA sequence analysis. *Molecular Ecology*, **14**, 1343-1354.

BHADURY P.**, AUSTEN M.C.**, BILTON D.T.++, LAMBSHEAD P.J.D.%%, ROGERS A.D. & SMERDON G.R.** 2005. Combined morphological and molecular analysis of individual nematodes through short-term preservation in formalin. *Molecular Ecology Notes*, **5**, 965-968.

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