Geochemical evidence for provenance of Ordovician cherts in southeastern Australia

M. C. BRUCE & I. G. PERCIVAL

Geological Survey of New South Wales, W.B. Clarke Geoscience Centre, 947-953
Londonderry Road, Londonderry, NSW 2753, Australia.

e-mail: michael.bruce@trade.nsw.gov.au

SUPPLEMENTARY PAPER

Australian Journal of Earth Sciences (2014) **61**(7)

<http://dx.doi.org/10.1080/08120099.2014.956792>

Copies of Supplementary Papers may be obtained from the Geological Society of Australia's website (www.gsa.org.au), the Australian Journal of Earth Sciences website (www.ajes.com.au) or from the National Library of Australia's Pandora archive (<http://nla.gov.au/nla.arc-25194>).

SUPPLEMENTARY PAPER

Appendix: Locality and biostratigraphic information for analysed chert samples.

SUPPLEMENTARY MATERIAL

Appendix: Locality and biostratigraphic information for analysed chert samples.

Oberon 1:100 000 sheet (Murray & Stewart 2001)

Murray & Stewart locality R15975: GR 756345 6258737

8830-SM Budhang; *Paracordylodus gracilis* conodont Zone.

Goulburn 1:100 000 sheet (Percival & Sherwin 2004)

Sample 8828-AJJ-32.1 (Bungonia Road cutting): GR 760885 6142425

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-AJJ-33.1 (Bungonia Road cutting): GR 762556 6141950

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8828-AJJ-171.1 (Mountain Ash road): GR 759271 6142170

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-AJJ-191.1 (roadside subcrop): GR 764086 6143240

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-DJP-239.1 (crest of spur): GR 766311 6175003

Nattery Chert Member of Abercrombie Formation; (*Pygodus serra* conodont Zone).

Sample 8828-DJP-283.1 (near crest of knoll): GR 765827 6171921

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-DJP-285.1 (beside fire trail): GR 765479 6172382

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8828-DJP-287.1 (ridge top beside fire trail): GR 764895 6170571

upper Abercrombie Formation; age: Darriwilian 3 to Gisbornian 1.

SAMPLE 8828-AJJ-64.1 (HUME HIGHWAY ROADCUT): GR 761412 6151348

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8828-ODT-201.1 (exposure in gully): GR 740254 6151812

Nattery Chert Member of Abercrombie Formation; (*Pygodus serra* conodont Zone).

Sample 8828-ODT-203.1 (200m E of white shed): GR 741332 6153647

Nattery Chert Member of Abercrombie Formation; (*Pygodus serra* conodont Zone).

Sample 8828-LS-120: GR 764623E 6164312N

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-GLLS-189: GR 761225E 6152072N

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8828-GLLS-193: GR 761488E 6153182N

Nattery Chert Member of Abercrombie Formation; (*Pygodus serra* conodont Zone).

Sample 8828-LS-219: GR 766755 6174060

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Gunning 1:100 000 sheet (Percival & Sherwin 2003)

Sample 8728-AYW-20 (roadcut, S of Rugby-Bevendale Road): GR 687790 6176362

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8728-AYW-155 (1.25 km N of “Coolong” homestead): GR 696398 6161232 Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8728-ODT-481 (~100 m N of Yass River) GR 691146 6135781

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Taralga 1:100 000 sheet (Percival & Sherwin 2005)

Sample 8829-ODT-37.1 (Oak Creek) GR 747433 6217083

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8829-ODT-38.1 (Silent Creek fire trail): GR 747153 6216792

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8829-ODT-82.1: GR 746989 6214443

Nattery Chert Member of Abercrombie Formation; *Pygodus serra* conodont Zone.

Sample 8829-ODT-92.1: GR 753547 6215098

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8829-ODT-543.1: GR 753461 6221284

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8829-ODT-802.1: GR 754490 6216946

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone. **Sample 8829-LJS-179.1:** GR 768506 6179610

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* – *Spinodus spinatus* conodont Zone.

Sample 8829-MMS-104.1 (ridge above Woodduck Creek): GR 748675 6192700

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Braidwood 1:100 000 sheet (Percival & Sherwin 2008)

Sample 8827-KEB-102.3: GR 767037 6120096

?Mummel Chert Member of Abercrombie Formation; *Paracordylodus gracilis* conodont Zone.

Sample 8827-KEB-390.1 (hill, Nadgigomar NR): GR 757245 6103976

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8827-ODT-924.1: GR 766672 6087481

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8827-ODT-1019.1: GR 772248 6088281

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* – *Spinodus spinatus* conodont Zone.

Sample 8827-ODT-1022.1: GR 771088 6088744

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8827-ODT-1137.1: GR 761731 6088771

lower Abercrombie Formation; Early Ordovician age.

Sample 8827-JAF-107.1: GR 766911 6121750

?Mummel Chert Member of Abercrombie Formation; *Paracordylodus gracilis* conodont Zone.

Sample 8827-JAF-109.1: GR 767318 6122928

Mummel Chert Member of Abercrombie Formation; *Oepikodus evae* conodont Zone.

Sample 8827-JAF-118.1: GR 768878 6123190

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sample 8827-JAF-224.1: GR 766304 6113097

Peach Tree Chert Member of Abercrombie Formation; *Paroistodus horridus* conodont Zone.

Sussex 1:100 000 sheet (Percival 2006b)

Sample 8135-GRB-461.1: GR 428247 6528512

Narrawa Formation; *Oepikodus evae* conodont Zone.

Sample 8135-GRB-497.1: GR 450327 6525457

Ballast Formation; *Pygodus serra* conodont Zone.

Sample 8135-SJT-270.1: GR 418828 6565921

Narrawa Formation; *Oepikodus evae* conodont Zone.

Sample 8135-SJT-401.1: GR 409424 6521253

Narrawa Formation; *Oepikodus evae* conodont Zone.

Sample 8135-SJT-423.1: GR 412303 6534952

Ballast Formation; *Pygodus serra* conodont Zone.

Sample 8135-SJT-427.1: GR 418979 6539570

Ballast Formation; *Pygodus serra* conodont Zone.

Byrock 1:100 000 sheet (Percival 2007)

Sample 8136-SJT-25.2: GR 407502 6582151

Narrawa Formation; *Oepikodus evae* conodont Zone.

Tantangara 1:100 000 sheet (Cam Quinn, unpublished data)

Sample 8626-CDQ-HH2: GR 644250 6040670

Stratigraphic unit uncertain, but probably correlative of the Nattery Chert Member, Abercrombie Formation. Presence of *Pygodus* sp. and *Spinodus spinatus* suggests most likely age is Darriwilian 3-4.

Tumut 1:100 000 sheet (Cam Quinn, unpublished data)

Sample 8527-CDQ-255: (Ridge immediately W of Tumut River) GR 608840 6115770

Stratigraphic unit uncertain, but probably correlative of the upper Abercrombie Formation. Presence of *Pygodus* sp. suggests age range from late Darriwilian to earliest Gisbornian.

Sample 8257-CDQ-382: GR 605271 6115392

Stratigraphic unit uncertain, but probably correlative of the uppermost Abercrombie Formation. *Pygodus anserinus* conodont Zone (Darriwilian 4 to Gisbornian 1).

Port Macquarie Block (Och, Percival & Leitch 2007)

Sample 9435-Ptmk-432: strongly recrystallised grey-black chert outcrop at Tacking Point.

Age: most likely Late Ordovician (Gisbornian – Eastonian).

Sample 9435-Ptmk-436: Orange-brown chert from Flynn's Beach.

Age: most likely ranging from late Darriwilian to early Gisbornian.

Narooma Chert (Glen, Stewart & Percival 2004)

Grid references (AGD66) (estimates only) for sites located on the 2nd edition (1989) Narooma 1:25 000 topographic sheet (8925-4-S) and on the 2nd edition (1988) Central Tilba 1:25 000 topographic sheet (8925-3-N).

Sample 8925-N19: GR 238060mE 5984560mN (Wagonga Scenic Drive).

Paracordylodus gracilis conodont Zone (late Lancefieldian to late Bendigonian).

Sample 8925-N35: GR 241400mE 5980500mN (highway south of Corunna Bridge).

Paracordylodus gracilis conodont Zone (late Lancefieldian to late Bendigonian).

Sample 8925-N42: GR 241770mE 5988890mN (quarry off Centenary Drive).

Pygodus serra conodont Zone (late Darriwilian, Da3–4).

Sample 8925-N82B: GR 237300mE 5992825mN (Chert Hill, Nobles).

Oepikodus evae conodont Zone (Bendigonian, most likely Be2–3).

Sample 8925-N96-2: GR 240325mE 5991880mN (outcrops on Princes Highway).

Age: Furongian (late Cambrian).

Sample 8925-N96-3: GR 240350mE 5991890mN.

?*Paracordylodus gracilis* conodont Zone (late Lancefieldian to early Bendigonian).

Sample 8925-N108: GR 237560mE 5987948mN (on north shore of Wagonga Inlet).

Spinodus spinatus conodont Zone (mid Darriwilian, Da2–3).

Sample 8925-N110: GR 236853mE 5988858mN.

Paracordylodus gracilis conodont Zone (late Lancefieldian to late Bendigonian).

Sample 8925-PL2924B: GR 240640mE 5991000mN (on Highway just north of Narooma).

Paracordylodus gracilis conodont Zone (late Lancefieldian to late Bendigonian).

Sample 8925-Kianga 4: GR 241500mE 5989750mN (road near Kianga Point).

Pygodus anserinus conodont Zone, latest Darriwilian (late Da4) to early Gisbornian (Gi1).

REFERENCES (ADDITIONAL TO THOSE CITED IN MAIN TEXT)

PERCIVAL I. G. & SHERWIN L. 2003. Palaeontological Determinations, Gunning 1:100 000 sheet. *Geological Survey of New South Wales, Report* GS 2003/524. 9pp.

PERCIVAL I. G. & SHERWIN L. 2004. Palaeontological Determinations, Goulburn 1:100 000 sheet. *Geological Survey of New South Wales, Report* GS 2004/457. 33 pp.

PERCIVAL I. G. & SHERWIN L. 2005. Palaeontological Determinations, Taralga 1:100 000 sheet. *Geological Survey of New South Wales, Report* GS 2005/750. 25 pp.

PERCIVAL I. G. & SHERWIN L. 2008. Palaeontological Determinations, Braidwood 1:100 000