

Ordovician NEWS



IUGS COMMISSION ON STRATIGRAPHY
SUBCOMMISSION ON ORDOVICIAN STRATIGRAPHY

No. 2 1984

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

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NOTES FOR CONTRIBUTORS

Correspondence, reviews (and lists) of recent publications, brief summaries of current research, notices of relevant local, national and international meetings, and additions, deletions or changes to list of Ordovician workers will be welcomed.

Contributions should be in English, typed single spaced (double space between paragraphs) on white paper - print area should not exceed 18.5 x 26 cm. Copy should be mailed flat (with cardboard protector) to Barry Webby, Department of Geology & Geophysics, University of Sydney, N.S.W. 2006, Australia.

Unless otherwise stated, Chris Barnes and Barry Webby are responsible for statements made in this issue of ORDOVICIAN NEWS.

ANNUAL REPORT OF THE SUBCOMMISSION ON ORDOVICIAN STRATIGRAPHY FOR 1983

The Subcommittee on Ordovician Stratigraphy is pleased to report the following developments and activities during 1983:

1. Ordovician Correlation Chart Series

The Subcommittee has been producing a series of correlation charts for Ordovician strata in major regions of the world in order to establish a data base for later global analysis of Ordovician correlations, chronostratigraphy and events.

One new chart was published, late in 1982 after submission of the 1982 Annual Report:

Hammann, W., Robardet, M. and Romano, M., 1982. The Ordovician System in Southwestern Europe (France, Spain and Portugal). Correlation Chart and Explanatory Notes. IUGS Publication No. 12, 73 p., 4 figs., 1 table, and 3 correlation charts.

Other charts nearing completion and expected for publication in 1984 are:

- Norway and Sweden (D. L. Bruton and V. Jaanusson)
- North Africa (P. Legrand and M. J. Destombes)
- South America (B. A. J. Baldis, F. G. Acenolaza, C. P. Hughes, et al.)
- Central Europe (B. D. Erdtmann, et al.)

Charts for Greenland and the USSR may be available after next year. The charts are sold through IUGS offices in Paris and Ottawa. The Subcommittee Chairman and Secretary are working with Dr. A. R. Berger to improve advertizing and sales of the charts. An order form, for example, will be included with the forthcoming Newsletter.

2. Fourth International Ordovician System Symposium

This meeting was held in Norway in August, 1982, and the details reported last year. The proceedings have now been edited and publication will be available in December 1983: D. L. Bruton (Editor), Aspects of the Ordovician System. Paleontological Contributions from the University of Oslo, No. 295, Universitetsforlaget.

3. New Ordovician Chronostratigraphy Working Groups Established

As noted last year, and approved in principle at the last S.O.S. meeting in Norway, August 1982, a series of Ordovician Chronostratigraphy Working Groups is being established. The Ordovician System is one of the most complex and many regional chronostratigraphic schemes are in use. Regional working groups will therefore appraise the existing scheme, review alternatives, examine modern data (e.g. some included in the charts) and alternative schemes, and determine key stratigraphic datums and events that may have international significance.

SUMMARY OF WORK AND ACHIEVEMENTS OF THE SUBCOMMISSION ON
ORDOVICIAN STRATIGRAPHY 1980-84

The following Ordovician Chronostratigraphy Working Groups have been established to date with the chairman or co-chairman noted in parentheses:

Britain (W. T. Dean)
North America (A. G. Harris and J. Repetski)
Balto-Scandia (D. L. Bruton)
Australasia (R. A. Cooper and F. VandenBerg)

A working Group for China should be in place within a few months and one for USSR hopefully will be established at, or immediately following, the International Geological Congress, Moscow, August 1984. It is expected that the work of these individual groups can be accomplished within four years. The results would be debated at, and recommendations advanced from, the next International Ordovician System Symposium. The exact date and location will not be decided until late 1984. The aim will be to arrive at a precisely defined Ordovician chronostratigraphic subdivision and if alternative schemes are deemed required for certain areas that these be also precisely defined and correlated with the principal scheme. As each group reaches decisions for its area it is likely that the Subcommission will arrange field trips to some areas, especially Britain, to review the Working Group's recommendations.

4. Subcommission Newsletter

A new Newsletter has been prepared and will be distributed in November 1983. The first issue will be 30 pages in length, distributed to 300 specialists, with an additional 200 copies printed for later distribution on request. The Newsletter will be prepared biannually from 1984 onwards. Dr. B. D. Webby will act as Newsletter Editor.

5. Subcommission Membership

There has been no change in the titular membership and the names and addresses are appended as a separate list.

No new corresponding members have been added, but several will be put forward for approval at the next Subcommission meeting in Moscow, 1984.

In summary, the Subcommission continues to have an active program of chart preparation and publication. Dr. R. J. Ross, Jr. continues to act as chart editor. A new phase of Chronostratigraphy Working Groups is now beginning and will take the Subcommission towards resolving central issues for the Ordovician System. New working groups in other areas (e.g. geochronology) will be established in 1984. The increased activities of the Subcommission will require additional financial support from the IUGS and Commission on Stratigraphy.

November 20, 1983.

Major business meetings of the Subcommission on Ordovician Stratigraphy have been held in Paris (1980), Oslo (1982) and Moscow (1984). An important scientific meeting was held in Sundvollen, Norway in 1982 as the IV International Symposium on the Ordovician System together with field trips throughout Scandinavia. The main publication from this conference was by Bruton D. L. (ed.) 1984, Aspects of the Ordovician System, Palaeontological Contributions from the University of Oslo, no. 295, Universitetsforlaget, 224 p.

The Subcommission established a program of Ordovician Correlation Charts for key regions in order to develop a data base for later global interpretations and chronostratigraphic decisions. Those for China, the near and Middle East, Australia, New Zealand and Antarctica, Canada, Southwestern Europe, and the United States were published during this period as IUGS Publication Nos. 1, 2, 6, 8, 11 and 12 respectively. Remaining charts currently in preparation are for South America, North Africa, Norway, Sweden, Greenland, Central Europe and Southeast Asia.

Anticipating the completion of the Correlation Chart series over the next two or three years, a set of Ordovician Chronostratigraphy Working Groups has recently been established for North America, China, Balto-Scandia, United Kingdom, South America and Australia. These groups will work regionally to review current chronostratigraphic subdivisions of the Ordovician System. Their work will finally lead to a full global review of the System over the next four year period. Work in geochronology and magnetostratigraphy will be integrated with the chronostratigraphic studies.

Work is at an advanced stage to define the boundaries of the Ordovician System as reported separately by the Boundary Working Groups.

IUGS ORDOVICIAN CORRELATION CHARTS - PROGRESS REPORTS

1. Central Europe. Excellent progress is being maintained in the preparation of the IUGS Correlation Chart for the Ordovician of Central Europe. under the guidance of Dr Bernd -D. Erdtmann. Plans are well in hand to have all contributions to Dr Erdtmann by 31 October 1984, with a publication date sometime in 1985. Currently the colleagues invited to participate in the project include the following: W. Franke (Göttingen), F. Geukens (Leuven, Belgium), W. Hammann (Würzburg), V. Havlicek (Praha), V. Jaanusson (Stockholm), M. Lindström (Marburg), J. Marek (Praha), R. Schallreuter (Hamburg), H. P. Schönlaub (Wien), W. Struve (Frankfurt), E. Tomczykova (Warszawa), A. Urbanek (Warszawa), M. Vanguetaine (Liegé, Belgium), and R. Walter (Aachen, W. Germany).
2. North Africa (Algeria and Tunisia). This chart is being prepared by L. Legrand and M. J. Destombes. It is hoped to complete preparation in 1984.

3. Norway and Sweden. D. L. Bruton and V. Jaanusson are co-ordinating work on correlation charts of Norway and Sweden. Other participants are A. W. Owen and S. M. Bergström. Work on the charts is nearing completion.
4. South America. The chart being prepared by B. A. J. Baldis, F. G. Acenolaza and C. P. Hughes is also nearing completion.
5. Greenland. J. Peel is currently assembling a chart, with plans for completion in 1985.

ORDOVICIAN CHRONOSTRATIGRAPHY WORKING GROUPS

In addition to the British working group whose recent work was reported in the last issue of ORDOVICIAN NEWS (No. 1, 1983), there has now been the establishment of four additional working groups to review the 'regional' series (and stages) of their regions. These are as follows:

1. China

The Chinese Ordovician Chronostratigraphy Working Group (COCWG) was set up under the guidance of Professors Lu Yenhao and Mu Enzhi who will act as advisers. The group includes ten members - An Taixing (Beijing, conodonts), Chen Junyuan (Nanjing, cephalopods), Chen Xu (Nanjing, graptolites), Lai Caigen (Beijing, cephalopods), Rong Jiayu (Nanjing, brachiopods), Wang Xiaofeng (Yichang, graptolites), Wang Zhihao (Nanjing, conodonts), Xu Hankui (Nanjing, brachiopods), Yang Shengwu (Guizhou, corals) and Zhou Zhiyi (Nanjing, trilobites). Chen Xu and Zhou Zhiyi are the group leaders.

2. Baltoscandia

The Baltoscandian Ordovician Chronostratigraphy Working Group (BSOCWG) includes S. M. Bergström, D. L. Bruton, B. -D. Erdtmann, V. Jaanusson, K. Larsson, A. Löfgren, A. W. Owen and S. H. Williams. The chairman is D. L. Bruton.

3. North America

The North American Ordovician Chronostratigraphy Working Group (NAOCWG) is comprised of C. R. Barnes, S. M. Bergström, W. B. N. Berry, R. L. Ethington, S. C. Finney, A. G. Harris, R. Ludvigsen, B. Norford, G. S. Nowlan, J. E. Repetski, J. Riva, R. J. Ross Jr., P. M. Sheehan and W. C. Sweet. The Co-Chairpersons are A. G. Harris and J. E. Repetski.

4. Australia and New Zealand

The Australasian Ordovician Chronostratigraphy Working Group (AOCWG) has R. A. Cooper and A. H. M. VandenBerg as Co-Chairmen. Other members include C. Burrett, B. Cooper, R. A. Henderson, J. Laurie, J. Shergold, B. Stait, I. Stewart and B. D. Webby.

Hopefully an additional working group can be established for the Soviet Union during the 27th International Geological Congress in Moscow in August 1984. It is also understood that B. A. J. Baldis and F. G. Acenolaza are prepared to organize a working group for Latin America.

These Ordovician Chronostratigraphy Working Groups have been, or are being, set up in order to work towards an internationally accepted chronostratigraphy for the Ordovician System. As noted in the first issue of ORDOVICIAN NEWS, the objects will be (i) to define the regional series (and stages) so as to include details of stratotype lithostratigraphy, thickness, facies variation away from stratotype sections and ranges of diagnostic fauna and flora; (ii) to recognize levels at which major faunal breaks/events occur and, where possible, tie points between the various zonal schemes (graptolites, conodonts and other groups); and (iii) to record just how applicable the redefined series/stages (and their lower boundaries) are for international correlation purposes, and for possible use in one or more series (or stage) classifications of the Ordovician System.

It is anticipated that answers to the issues noted above will be forthcoming within the next four years. At the next International Ordovician System Symposium, a main theme will be Ordovician chronostratigraphy. The recommendations from the various regional groups can be presented and debated, hopefully resulting in a consensus on the global chronostratigraphic terminology to be adopted for the System.

The preliminary start to this process has begun with the paper by Whittington, H. B. et al., 1984, "Definition of the Tremadoc Series and the series of the Ordovician System in Britain", Geological Magazine, vol. 121(1), p.17-33.

Ordovician Geochronology and Geomagnetism Working Groups

As noted in the last issue, we are considering establishing working groups dealing with Ordovician geochronology and Ordovician geomagnetism. Contacts have been made with specialists to these fields who are presently serving on related IUGS Subcommissions. If you would like to assist in this work or can offer suggestions of specialists in these areas, please contact Chris Barnes or Barry Webby.

BUSINESS AND SCIENTIFIC MEETINGS OF SUBCOMMISSION
AND RELATED BODIES TO BE HELD AT 27TH IGC IN MOSCOW,
AUGUST 1984



A number of meetings of interest to Ordovician specialists, including the next formal business meeting of the Subcommission on Ordovician Stratigraphy, will be held at the 27th International Geological Congress in Moscow, in August 1984.

The Third Circular lists (p. 9-10) the following meetings, dates and times (final details may of course change by the time of the IGC).

Meeting	Date	Time	Place
Commission on Stratigraphy	Aug. 5, 13	18.30 - 21.00	Univ. Bldg 2, Rm 13
Working Gp, Cambrian/ Ordovician Boundary	Aug. 9	13.00 - 15.00 18.30 - 21.00	Univ. Bldg 2, Rm 13
Subcommission on Ord. Strat.	Aug. 9, 13	18.30; 8.30 - 13.00	Univ. Bldg 2, Rm 12
Subcommission on Camb. Strat.	Aug. 8	18.30 - 21.00	? ?
Subcommission on Sil. Strat.	Aug. 10	18.30 - 21.00	Univ. Bldg 2, Rm 12
Working Group on Cambrian Correlation	Aug. 6, 7	13.00 - 15.00 18.30 - 21.00	Univ. Bldg 2, Rm 13
Subcommission on Strati- graphic Correlation	Aug. 8, 9	18.30 - 21.00	Univ. Bldg 2, Rm 510
Int. Palaeontological Assoc.	Aug. 8, 9	18.30	? ?
IGCP 192. Camb.-Ord development in South America	Aug. 5, 6	18.30	? ?

Because of the obvious conflicts of meetings of similar interest, some attempt is being made to rearrange the above schedule.

The preliminary agenda for the meetings of the Subcommission on Ordovician Stratigraphy is as follows:

1. Introductory comments.
2. Approval of Agenda.
3. Approval of Minutes of last Subcommission meeting, Sundvollen, Norway, 22 August 1982.
4. IV International Symposium on the Ordovician System, Oslo and publication.
5. Ordovician Correlation Charts: status reports on those in preparation.
6. Ordovician Chronostratigraphy Working Groups
 - a. Progress reports from Working Groups for Britain, Balto-Scandia, North America, China, Australia, South America.
 - b. Establishment of Working Groups for other areas (e.g. U.S.S.R.).
 - c. Integration of zonal schemes.
7. Ordovician Geochronology and Geomagnetism - establishment of possible working groups.

8. Ordovician paleoceanography, paleogeography, and palaeoclimatology.
9. Ordovician boundaries
 - Decision on base of Silurian System (O-S Bdry Wkg Gp).
 - Status of base of Ordovician System (C-O Bdry Wkg Gp).
10. Possible location and date for (next) V International Symposium on the Ordovician System.
11. Election of Officers and Titular Members of Subcommission: Report of the Nominating Committee.
12. Approval of the New Corresponding Members of Subcommission.
13. Future activities.
14. Other business.

GRAPTOLITE CONFERENCE

3. INTERNATIONAL CONFERENCE OF THE GRAPTOLITE WORKING GROUP OF THE INTERNATIONAL PALAEOONTOLOGICAL ASSOCIATION COPENHAGEN, August 24 - September 2, 1985



Besides the meeting itself (August 26-30) in Copenhagen, there will be field meetings in Oslo, Norway (August 25), Scania, Sweden (August 21-September 1) and Bornholm, Denmark (September 2). The theme of the conference is: "Palaeobiological aspects and geological use of graptolites", and there will be sessions on: 1) biostratigraphy, 2) taxonomy and classification, 3) evolution, relation to geologic events, 4) palaeobiological and ecological aspects, 5) a diverse group including investigation methods. A number of workshops are also planned.

Circular 3 and registration forms can be obtained from:

Dr. Merete Bjerreskov, Inst. of Historical Geology & Palaeontology, Øster Voldgade 10, DK-1350, Copenhagen K, Denmark.

Deadline for abstracts is December 1, 1984.

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(containing additions and corrections to list of
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CURRENT RESEARCH

BRITISH ISLES

- R.J. Aldridge, Nottingham: Current dabbles in the Ordovician include a study, with Richard Fortey and Paul Smith, of conodonts from the early Ordovician Hanadir Shale of Saudi Arabia. The Fourth International Conodont Symposium held in Europe (ECOS IV) will be in England from 20 July to 2 August 1985. The programme includes a field excursion to examine Lower Palaeozoic sections in the Welsh Borderland. Anyone requiring details should write to me.
- M.G. Bassett, Cardiff: Arenig brachiopods from South Wales. Early Ashgill silicified brachiopods from Hadeland, Norway. Brachiopods of the Moldå Limestone (Middle Ordovician) Darlarna and Östergötland, Sweden. Ordovician-Silurian faunas in the central-northern Scandinavian Caledonides. The inarticulate brachiopod genus Philhedra.
- P.J. Brenchley, Liverpool: Sedimentology of clastic sequences in Ordovician of Portugal and Spain. Sedimentology and geochemistry of sequences across the Ordovician/Silurian boundary.
- L. Chernes, Swansea: Lower Palaeozoic stratigraphy and facies development, Scandinavian Caledonides.
- L.R.M. Cocks, London: Revision of type Llandovery area (including the late Ordovician there). New late Ordovician fauna from South Africa. Review (with Richard Fortey) of Caledonides faunal evidence Arenig to Llandovery.
- S. Conway Morris, Cambridge: Would be interested to learn of any soft-bodied material from the Ordovician.
- J.C.W. Cope, Swansea: Tremadoc and Arenig of South Wales; Ordovician bivalves, monoplacophorans, sponges and problematica.
- P.R. Crowther, Leicester: Ultrastructure of graptolites.
- G.B. Curry, Glasgow: Ordovician faunas of western Ireland, Scotland and Spitzbergen. Fossil and Recent brachiopods. [Also see this issue, p.31]
- W.T. Dean, Cardiff: Cambrian and Ordovician stratigraphy, and trilobites, in Turkey, Wales, Belgium and Canada.
- D.H. Evans, Swansea: Investigations of British Ordovician cephalopod faunas.
- R.A. Fortey, London: Revision of Arenig Series in type development in Wales. Graptolite and trilobite classification. Trilobite palaeoecology. Relationship of biogeography and biostratigraphy, especially Cambrian/Ordovician boundary, with details in Newfoundland, the Arctic and Australia.
- T.L. Harland, Chester: Ordovician algae from Norway, and Trenton limestones of Quebec.
- D.A.T. Harper, Dundee: Monographic research on the middle and upper Ordovician brachiopods of the Oslo region together with comparable material from Sweden. Stratigraphy of the Ordovician rocks of the Oslo region (with D.L. Bruton and A.W. Owen). Systematic description, biogeographical and palaeoecological assessment of Arenig brachiopods from Tagoat, S.E. Ireland (with D.E.B. Bates). Systematic description and ecostratigraphy of various brachiopod faunas in County Waterford, S.E. Ireland (with H. Carlisle). Brachiopod faunas from the upper Ordovician rocks of Kilbucho and Wrae Hill, Southern Uplands of Scotland (with W.I. Mitchell). Inarticulate brachiopods from upper Ordovician black shales in County Down, N. Ireland and the Southern Uplands of Scotland (with L. Craig). Sedimentary facies and faunal associations in the Drummuck Group (Ashgill), Girvan, Scotland. Assessment of fossil faunas from the Scandinavian Caledonian fold belt.

C.H. Holland, Dublin: Palaeozoic (especially Silurian) nautiloids, Lower Palaeozoic stratigraphy. Principles of stratigraphy.

S.I. Jusypiw, Newbury: Stratigraphy and faunas of the Upper Cambrian and Tremadoc succession in the Tremadoc district, North Wales. British Tremadoc faunas.

S.G. Molyneux, Keyworth: Biostratigraphy of acritarchs and chitinozoa in Ordovician sections of N. England, Isle of Man, Wales, S. Scotland. Several papers in preparation on Tremadoc and Arenig acritarchs from N. England.

W.G. Morris, Cambridge: Tremadoc graptolite assemblages from Lancefield, Victoria (Australia). Taxonomic problems of grpto-dendroids.

J. Mortin, Swansea: Investigations into systematics, mode of life, zoological affinities etc., of conulariids worldwide (but concentrating on British material) - Ordovician to Triassic.

A.W. Owen, Dundee: Ordovician stratigraphy of the Oslo Region, Norway. Ordovician trilobites of Scandinavia and the British Isles. Trilobite abnormalities (injuries, teratology etc.).

R.M. Owens, Cardiff: Arenig stratigraphy and faunas in South Wales (jointly with R.A. Fortey). Results of eight seasons of field work currently being written up - to be submitted to Brit. Mus. (Nat. Hist.) Bulletin Series in mid-1984.

D.J. Siveter, Leicester: Ordovician and Silurian ostracoda - Britain and North America.

M.P. Smith, Nottingham: Ibexian-Whiterockian conodont palaeontology and biostratigraphy of Greenland. Llanvirn conodonts from Saudi Arabia. Conodont biostratigraphy of the Durness Limestone, N.W. Scotland.

H.B. Whittington, Cambridge: Treatise trilobites, Burgess Shale and Ordovician Series.

A.D. Wright, Belfast: Shelly faunas and sedimentation about the lower and upper boundaries of the Ashgill Series in the Cross Fell and Cautley-Dent inliers of northern England.

SCANDINAVIA

P. Ahlberg, Lund: Ordovician agnostid trilobites.

Y. Grahn, Uppsala: Ordovician and Lower Silurian Chitinozoa from midcontinental U.S.A.

N.-M. Hanken, Tromsø: Facies relationships of Upper Ordovician carbonate banks in the Ringerike area, Oslo Region, Norway.

L. Holmer, Uppsala: Biostratigraphy, taxonomy and palaeobiology of Ordovician inarticulate brachiopods. Carbonate sedimentology and hardground formation in the Ordovician of Baltoscandia.

L.O. Karis, Uppsala: Ordovician stratigraphy of central Sweden. Lower Ordovician trilobite and ostracode faunas.

K. Larsson, Lund: Middle Ordovician ostracodes of central Sweden. Oncolites-stromatolites in Lower-Middle Ordovician of Sweden.

S. Laufeld, Uppsala: Work on Silurian Chitinozoa and (together with L. Jeppsson) the stratigraphy of the late Silurian Öved-Ramsösa Group in Scania, southern Sweden.

K. Lindholm, Lund: Graptolite stratigraphy and taxonomy of the Tremadoc-Arenig transition beds and the lower Didymograptus Shale in southern Scandinavia, including study of the dendroid/graptoloid transition (in particular the descent of *Didymograptus* s.l.) and a revision of Monsen 1937. A joint project with A. Löfgren aims at correlating Scandinavian graptolite zones with conodont zones of the above time interval.

A. Löfgren, Lund: Early Ordovician conodont taxonomy and biostratigraphy.

H. Mutvei, Stockholm: Functional morphology in nautiloid cephalopods. Ultrastructure in trilobite exoskeletons.

B. Neuman, Bergen: Taxonomy, ontogeny and palaeoecology of Ordovician and Silurian rugose corals, and Ordovician and Silurian biostratigraphy.

R. Nilsson, Lund: Study of a deep boring through Ordovician and Silurian strata at Lovisefred in Northwest Scania, S. Sweden.

J.S. Peel, Copenhagen: Cambrian-Ordovician platform stratigraphy and palaeontology in Greenland. Lower Palaeozoic molluscs, especially gastropods and monoplacophorans.

N. Spjeldnaes, Oslo: Ordovician palaeoclimate, stratigraphy, bryozoans, brachiopods, calcareous algae and vertebrates; aspects of taxonomy, functional anatomy and palaeoecology.

B. Sturt, Bergen: Regional geological relationships of ophiolites and island arc complexes in the Scandinavian Caledonides. The sequential development of the Caledonide Orogen with particular reference to N.W. Europe.

B. Wandås, Stavanger: Ordovician sedimentology and stratigraphy of the Hólonda area, Norway. Also part of an ICGP project on the Caledonian Orogeny (together with D.L. Bruton and J.F. Bockelie). Mapping on the continental shelf off the north coast of Norway.

SPAIN, FRANCE, ITALY, BELGIUM & THE NETHERLANDS

C. Babin, Brest: Bivalvia from the Spanish Ordovician.

A. Brouwer, Leiden: Ordovician succession on the Cantabrian Mts (northern Spain) and comparison with adjoining areas (Pyrenees, Celtiberic chain, French Brittany etc.).

J-L Henry, Rennes: Geographical variations within Ordovician trilobites. Enrolment and coadaptations in trilobites; evolution and phylogeny. Geographical distribution of Ordovician trilobites in western Europe and North Africa.

J.C. Gutierrez-Marco, Madrid: Ordovician graptolite faunas of Spain. Biostratigraphy and palaeobiogeography of the Llanvirn-Llandeilo faunas of the Iberian Peninsula.

P. Legrand, Pessac: Graptolites of Lower Tremadoc and Ordovician/Silurian boundary.

F. Martin, Bruxelles: Acritarchs and chitinozoans, in particular Cambro-Ordovician acritarchs from eastern Newfoundland, Ordovician acritarchs from Wilcox Pass, southern Canadian Rockies, and Ordovician acritarchs from the Canning Basin, western Australia (with G. Playford).

M. Prieto Nogueira, Madrid: Ordovician brachiopods of central Spain.

I. Rabano, Madrid: Ordovician trilobite faunas of Spain.

E. Serpagli, Modena: Ordovician conodonts of Spain. Ordovician stratigraphy of Sardinia. Upper Ordovician Bryozoa (functional morphology of the opercular apparatus).

EAST AND WEST GERMANY, AUSTRIA, POLAND, CZECHOSLOVAKIA AND BULGARIA

G. Biernat, Warszawa: Morphology, shell structure and evolutionary trends of inarticulate brachiopods, especially acrotretids. Would like to receive any acrotretid specimens from Cambro-Ordovician and Silurian strata.

B.-D. Erdtmann, Göttingen: Graptolite taxonomy, ecology and stratigraphy, acritarch stratigraphy - depositional environments of Tremadoc and Arenig in Scandinavia, Central Europe, Sierra Morena (Spain) and western Newfoundland. Event stratigraphy and black shale depositional analysis of Early Ordovician worldwide. Ordovician correlation chart of Central Europe.

H. Jaeger, Berlin: Silurian and Devonian graptolites.

R. Kalvacheva, Sofia: Ordovician acritarch stratigraphy of Pre-Variscan metamorphosed sections in Balkan Mountains of Bulgaria. Dating of phyllites in south-Alpine basement in Italy on the base of a Cambrian acritarch assemblage.

R. Schallreuter, Hamburg: Ordovician ostracods of Europe and South America.

O. Schmidt, Göttingen: Graptolite fauna of the Bogo Shale (Arenig-Llanvirn) in Sweden.

H.P. Schönlaub, Wien: Mapping and biostratigraphy of Lower Palaeozoic sequences in the Carnic Alps. Conodont biostratigraphy in the Barrandian and southern France.

H. Szaniawski, Warszawa: Structure of conodonts and conodont-like fossils. Conodonts of Cambrian/Ordovician boundary.

J. Vanek, Praha: Studies of morphology and phylogeny of the Harpetidae, Cheiruridae and Proetida (Trilobita).

R. Wolfart, Hanover: Ordovician ostracodes, conodonts and other faunas of Burma and Thailand. Cambrian of the world.

SOVIET UNION

G.P. Abaimova, Novosibirsk: Biostratigraphy of Lower Ordovician of Siberian Platform and correlation of Cambrian/Ordovician boundary.

M.K. Apollonov, Alma-Ata: Lower and upper boundaries of the Ordovician; subdivisions of the Ordovician of Kazakhstan; Ordovician correlation chart of Kazakhstan; uppermost Cambrian and Lower Ordovician trilobites of Kazakhstan.

M.N. Chugaeva, Moscow: The continuous carbonate section in South Kazakhstan spans the Upper Cambrian to Lower Ordovician interval. Association of both trilobites and conodonts at the same site provides a firm basis for establishing the succession and for worldwide correlation. A number of trilobites are suggested to be offshore type, such as Agnostids, Shumardiidae, Eulominae, Harpididae, Nileidae, Ceratopygidae, Macropyginae, and they occur together with a shelf-edge fauna (Saukiidae, Leio-stegiidae, Kingstoniidae). The former group exhibits definite evolutionary trends and passes through the Cambrian/Ordovician boundary with little morphological change. Some of the Cambrian taxa seem to be ancestral to the Tremadoc (non-olenid) European fauna. Conodonts are represented by pandemic evolutionary-related taxa. A very similar succession of conodonts is established in different facies around the world. The conodonts are suggested as the most useful group for both definition and correlation of the base of the Ordovician System near the base of the Tremadoc. Studies of trilobites are by Apollonov M.F. and Chugaeva M.N., and conodonts by Svetlana Dubinina (Geol. Inst., Moscow).

S. Mägi, Tallinn: Lithology, stratigraphy and microfossils of Lower Ordovician of the eastern Baltic area.

M.M. Oradovskaya, Magadan, and R.F. Sobolevskaya, Leningrad: Ordovician and Silurian biostratigraphy, facies and fauna (brachiopods, graptolites and trilobites, especially the Ordovician/Silurian boundary in the northeastern U.S.S.R.

L. Põlma, Tallinn: Lithology of the Ordovician in the East Baltic Ordovician/Silurian boundary problems and stratotypes in Estonia.

A. Ryymsoks, Tartu: Strophomenida in the Ordovician of Estonia. Trilobite genus Toxochasmops in the Ordovician of Estonia.

E.A. Yolkin, Novosibirsk: Biochronology of the Upper Ordovician-Devonian of Siberia. Silurian trilobites of the Siberian Platform (biostratigraphy, palaeontology and phylogeny). Ecostratigraphy of Lower and Middle Devonian of the Salair.

INDIA AND THAILAND

V.J. Gupta, Chandigarh: Lower Palaeozoic palaeontology and biostratigraphy of Ladakii and Spiti Himalayas.

T. Wongwanich, Bangkok: Sedimentation and environment of deposition of Ordovician limestones in Thailand; also establish Cambrian/Ordovician boundary, study Ordovician geography and assess resource potential of succession.

PEOPLE'S REPUBLIC OF CHINA

Chen Junyuan, Nanjing: Lower Palaeozoic cephalopods. Ordovician biostratigraphy and environments in China. Recently published contributions on faunal sequence across Cambrian/Ordovician boundary in northern China and its international correlation, Ordovician biostratigraphy of western Ordos, Ordovician sediments and faunas in the Taihang mountains, North China, outline of Ordovician deposits and faunas in Shandong, N. Anhui, and N. Jiangsu, and discovery of Ordovician actinoceroids from the Mt Kongur area, southwest of Xinjiang.

Chen Xu, Nanjing: Ordovician/Silurian boundary and the graptolite fauna. Ordovician and Silurian environments, and Ordovician chronostratigraphy.

Lu Yanhao, Nanjing: Cambrian/Ordovician boundary in China. Genesis and distributions of Cambrian metallic and non-metallic ores of China, and their relation to bio-environmental control hypothesis.

Rong Jiayu, Nanjing: Brachiopods of latest Ordovician in the Yichang district, W. Hubei, central China. Terminal Ordovician Hirnantia fauna in Xainza, northern Xizang, N. Tibet (with Xu Hankui).

Wang Xiaofeng, Yichang: In view of the need for global Ordovician classification and correlation, my colleagues and I have been working on the Ordovician strata of the eastern Yangtze Gorges, China, since 1978 with the Huanghuachang section as the stratotype. This is a quite complete Ordovician section with a great abundance of various fossils. A preliminary report of the achievement of this study, which includes definitions of stages and lower and upper boundaries, and the changes of corresponding major fauna and flora, as well as descriptions of lithostratigraphy, has been published in the Bull. Yichang Inst. Geol. & Min. Res., Chinese Acad. Geol. Sci. 6 (1983). The full report is expected to be published in Geol. Publ. House in 1985.

CANADA

A. Achat, Einstein-Sté Foy: Ordovician Chitinozoa from the province of Quebec.

T.E. Bolton, Ottawa: Late Ordovician-Early Silurian corals, Anticosti Island and Gaspe Peninsula, Quebec. Ordovician-Silurian stromatoporoids of eastern Canada. Lower-Middle Ordovician faunas of the Mingan Islands, Quebec.

R. J. Elias, Winnipeg: Systematics, Paleobiology, paleoecology, taphonomy, biostratigraphy, biogeography and evolution of North American Ordovician solitary rugose corals.

K. Kenna, St. John's: Late Ordovician tabulate corals, especially heliolites, from Tasmania.

A. Lenz, London: Ordovician/Silurian boundary strata of northern Canadian Cordillera and Arctic Islands.

P. Lesperance, Montreal: Upper Ordovician - Lower Devonian biostratigraphy.

A. D. McCracken, London: Middle Ordovician-Lower Silurian conodonts and graptolites of the northern Yukon and Arctic Canada (with A. Lenz), and Ordovician-Silurian conodonts of the Whittaker Formation of North west Territories (with G.S. Nowlan).

U. Mayr, Calgary: Stratigraphy and structure of Lower Palaeozoic Platform of Canadian Arctic Islands.

B.S. Norford, Calgary: Ordovician stratigraphy and biostratigraphy of mainland western Canada.

G.S. Nowlan, Ottawa: Lower and Middle Ordovician conodonts from the Mingan Islands, Quebec. Late Precambrian phosphatic microfossils, Wernecke Mountains, Yukon Territory. Late Ordovician conodonts from the Whittaker Formation, Avalanche Lake, Northwest Territories. Compilation of isograd maps based on conodont colour alteration for eastern Canada.

D.R. Pratt, Toronto: Sedimentology and trilobite paleontology of a Cambrian and Early Ordovician continental margin sequence in the Mackenzie Mountains of northwest Canada. Continuing research on stromatolitic microstructure, including those of Ordovician age. Taxonomic description of Early Ordovician corals from western Newfoundland. Models of Lower Ordovician epeiric sea carbonate sedimentation (with N.P. James).

B. Stait, St. John's: Cambrian-Ordovician nautiloid taxonomy, biostratigraphy and biogeography, especially Australia, Southeast Asia and Newfoundland. Ordovician trilobite taxonomy, biostratigraphy and biogeography.

S.H. Williams, St. John's: Taxonomy and biostratigraphy of Lower Ordovician graptolites from the Cow Head Group, western Newfoundland.

UNITED STATES

T.W. Amsden, Norman, OK: Keel-Edgewood (Hirnantian) in midcontinental U.S.A. - palaeoenvironmental study. Late Ordovician, Silurian to Early Devonian correlation chart and brachiopod range chart of Oklahoma to Mississippi Valley, U.S.A.

R.L. Anstey, East Lansing, MI: Paleogeography of Late Ordovician bryozoans in North America. The Late Ordovician bryozoan extinction. Heterochrony in bryozoan evolution. Improved biometry for fossil bryozoans via quantitative stereology.

J.M. Berdan, Washington, DC: Study of ostracode ranges across the Middle-Upper Ordovician boundary at the stratotype section in Kentucky.

S.M. Bergström, Columbus, OH: Several projects in the Middle Ordovician of Great Britain. Conodont biostratigraphy and paleoecology in the Appalachians and Baltic region. Caledonide biostratigraphy in central Norway. Middle Ordovician bentonites. Chitinozoans in the Middle Ordovician of Southern Appalachians.

A.J. Boucot, Corvallis, OR: Mostly Silurian-Devonian brachiopods and gastropods. Also study of an Ashgill community with colleagues in Nanjing (Rong Jiayu and Yang Xuechang).

C. Carter, Menlo Park, CA: Taxonomic and biostratigraphic studies of Ordovician and Silurian graptolite faunas of Alaska.

R.J. Cuffey, University Park, PA: Ordovician bryozoan paleoecology (especially biohermal and sedimentary contributions) and biostratigraphy; morphology, systematics and distributions of the earliest bryozoans.

R.L. Ethington, Columbia, MO: Conodonts in deep-water facies, Ouachita Mountains, Arkansas. Lower and lower Middle Ordovician conodonts of central and western U.S.

S.C. Finney, Stillwater, OK: Graptolite biostratigraphy and biogeography of Middle Ordovician of southern Appalachians. Graptolite biostratigraphy of Ordovician of Arbuckles and Ouachitas, Oklahoma and Arkansas. Upper Ordovician graptolites from Jarntland, Sweden. Description of isolated graptolites from many Ordovician localities, including new forms from Bolivia (paper with L. Branisa in press in Geol. Mag.). Also contributing on heterochrony, punctuated equilibrium and graptolite zonal boundaries, and with S.M. Bergström on biostratigraphy of Ordovician Nemagraptus gracilis zone in press in J. geol. Soc. Lond., Spec. Publ.

G.M. Friedman, Troy, N.Y.: We are currently completing our map of "Sedimentary Lithofacies of the Lower Ordovician (Tremadocian-Arenigian) in the Eastern United States" a project of the International Geological Correlation Program. The authors of this map are M.R. Buyce, G.M. Friedman, L.R. Sternbach, and R.U. Dolfi. A paper on the northeastern United States has been published, as follows: Dolfi, R.U. and Friedman, G.M., 1983, Regional lithofacies of Lower Ordovician (Canadian age) Strata of New York and New England: Northeastern Geology, v.5, p.40-53. A subsurface study of the uppermost Ordovician Keele Oolite in the Anadarko Basin of Oklahoma is the focus of C.A. Sternbach's Ph.D. thesis. A study of the Lower Ordovician subsurface strata of Alabama, using cores of the Alabama Geological Survey, forms the subject of L.R. Sternbach's Master's thesis. Dr. M.R. Buyce's project involves the subsurface Lower Ordovician Ellenburger Formation in the Permian Basin of Texas. Stephen F. Uschel is studying deep-burial diagenesis of Canadian age (Lower Ordovician) strata of the area surrounding the Adirondack Dome in New York State for his Master's thesis. Steven A. Chisick is completing a sedimentologic analysis as his Ph.D. thesis on the Lower Ordovician (Tremadoc-Arenig) formations of eastern New York and Vermont.

D.R. Hickey, East Lansing, MI: Paleobiology and paleoecology of ectoprocts (Bryozoa). Use of developmental parameters in systematics, developmental theory of macroevolutionary processes, controls on evolutionary tempos, constraints in adaptive radiations, morphological integration, morphometrics, ontophylogenetics.

T.J. Hutter, Houston, TX: Chitinozoan, acritarch and spore biostratigraphy of the Great Basin and other Palaeozoic deposits and basins of the western U.S.

M. Kamandulis, State College, PA: Bryozoan research in Maysville, Kentucky area.

O.L. Karklins, Washington, DC: Paleozoic bryozoan biostratigraphy, paleoecology, systematics - mostly Ordovician and Carboniferous of North America, and world.

E. Landing, Albany, N.Y.: Lower Ordovician conodont-trilobite-graptolite biostratigraphy in Taconic allochthons, New York and Quebec. Tremadoc conodonts of Cape Breton Island. Conodont biostratigraphy of the Upper St. Charles and Lower Garden City Formations, northern Utah and southeastern Idaho.

W.D. Martin, Oxford, OH: Benthic community development in Cincinnati (Upper Ordovician) limestones.

D.L. Meyer, Cincinnati, OH: Current research focussed on biostratigraphy and paleoecology of edrioasteroid and crinoid assemblages in the Cincinnati Series.

D.G. Mikulic, Champaign, IL: Calcareous and ferruginous oolites at the Ordovician/Silurian boundary; editing volume on this topic (with J. Kluessendorf) to be published by Wisconsin Geol. & Nat. Hist. Survey in 1984 or 1985. Trilobite taxonomy, ecology and biogeography (especially in carbonate buildups).

M.H. Nitecki, Chicago, IL: Evolution, morphology and systematics of receptaculitids and other problematic Ordovician fossils.

A.R. Palmer, Boulder, CO: Review of biotite boundaries to be published in J. Paleont. sometime in 1984, one of which is at or near the base of the Ordovician.

J. Pojeta Jr., Washington, DC: Cambrian and Ordovician molluscs especially diasomes - their taxonomy and biostratigraphy. In addition I am editing a series of publications on the Middle-Upper Ordovician boundary reference section in Ohio, Indiana and Kentucky.

D.M. Rohr, Alpine, TX: Ordovician gastropods from the Seward Peninsula, Alaska (with A.W. Potter).

J.R.P. Ross, Bellingham, WA: Ordovician bryozoans from various parts of the world.

S.D. Ruppel, Austin, TX: Conodont biostratigraphy and depositional system of Middle Ordovician of Quebec. Petrology, depositional systems and petroleum potential of Lower Ordovician of Texas.

A. Salvador, Austin, TX: As Chairman of the Int. Subcom. on Strat. Classif. (ISSC) of the Int. Comm. on Strat., I am involved in work on stratigraphic principles and procedures. At present, the main areas of interest are the stratigraphic classification of igneous and metamorphic rocks and unconformity-bounded units, as well as the preparation of a glossary of stratigraphic terms. I have also been involved in the preparation of standard global chronostratigraphic/geochronologic scales for the new set of stratigraphic correlation charts for the U.S. (Project COSUNA). In relation to both activities I am most interested in the work of the Subcom. on Ordovician Stratigraphy.

J. Sprinkle, Austin, TX: New rhombiferan cystoid from the Early Ordovician of southern Idaho. Late Cambrian echinoderm faunas from SE Missouri (with H.L. Strimple) and NE Alabama (with G.L. Bell, Jr.). Middle Ordovician echinoderm fauna from Birmingham, Alabama (with G.L. Bell, Jr.).

J.H. Stitt, Columbia, MO: Taxonomic work on trilobites and brachiopods across the Cambrian/Ordovician boundary interval at Mt. Wilson, Canada (with J.R. Derby).

C.W. Stock, University, AL: Middle Ordovician stromatoporoids in the Chickamauga Limestone of Alabama and Georgia. Other projects on the Chickamauga Limestone include student studies of the brachiopod biostratigraphy and the paleoecology and sedimentary petrology of the bioherms.

W.C. Sweet, Columbus, OH: Assembly of sections of upper Middle and Upper Ordovician rocks in North America into detailed chronostratigraphic network by graphic correlation techniques largely based on conodonts. Also work on lower Middle and Lower Ordovician conodont faunas from Oklahoma and the Kansas subsurface.

J.F. Taylor, Indiana, PA: Distribution of fauna, especially trilobites, and lithologies across the Cambrian/Ordovician boundary in Oklahoma and Texas. Also study of trilobite faunas of Upper Cambrian and Lower Ordovician rocks of the Appalachians.

G. Theokritoff, Newark, NJ: Early Cambrian biogeography of the North Atlantic region, and slope faunas of North American paleocontinent. Skeletonization at the base of the Palaeozoic.

R. Titus, Oneonta, NY: Paleontology of the Trenton Group, especially the crinoids and trace fossils.

D.B. Velbel, East Lansing, MI: Stratigraphy, paleontology and 'stratigraphic resolution' of the Upper Ordovician Nicolet River Formation, St Lawrence Lowlands, Quebec.

B.J. Witzke, Iowa City, IO: Middle and Upper Ordovician lithostratigraphy, conodont biostratigraphy, benthic communities and depositional environments in Iowa and the central Midcontinent, USA. Ordovician studies have focussed on Upper Mississippi Valley outcrops and subsurface core sequences of Iowa and Nebraska.

E.L. Yochelson, Washington, DC: Still interested in mollusks, but have found that some Ordovician monoplacophorans may be chondrophorine coelenterates. Concerned about opercula of Ordovician gastropods.

ARGENTINA

B.A. Baldis, Olivos: Development of the continental border of Latin America during Cambrian and Ordovician, especially in the carbonate facies, and relations with trilobite faunas and stromatolitic (thrombolitic) accumulations. Presence of 'great cycles' in Ordovician of the Andean Belt.

M.S. Beresi, Mendoza: Paleogeology and fossil associations in Ordovician calcareous facies. Also studies of Ordovician calcareous algae, sponges and calcareous micro-facies.

S.B. González, Buenos Aires: Lower Ordovician trilobite faunas of Argentina and Colombia. Revision of the genus *Jujuyaspis* Kobayashi 1936. Application of numerical taxonomy and analysis of variance in Ordovician faunas of Argentina.

D.L. Melendi, Buenos Aires: Chitinozoans and acritarchs of Ordovician and Silurian of Argentina.

CHILE

C. Cecioni, Santiago: Studies of some Bathmoceratidae (nautiloids) from Bolivia (with R.H. Flower).

AUSTRALIA

P. Baillie, Rosny Park: Stratigraphic and structural relationships between SE Australia, Tasmania and Antarctica as determined by studies of the Ordovician facies and their interrelationships. Sedimentology of the Owen Conglomerate (Late Cambrian - Early Ordovician) and correlatives in western Tasmania.

B. Cooper, Eastwood: Early Palaeozoic stratigraphy of South and Central Australia. Studies of the conodonts from the Stokes Siltstone of the Amadeus Basin (with C.R. Barnes).

J. Laurie, Canberra: Ordovician brachiopod taxonomy and biostratigraphy of Tasmania. Macrofossils of the Ordovician of the Amadeus Basin.

L. Sherwin, Sydney: Early Ordovician graptolites (La3) from the Parkes district, N.S.W. (with B-D. Erdtmann).

A.H.M. VandenBerg, Melbourne: Taxonomy and biostratigraphy of Late Ordovician (i.e. *N. gracilis* and younger) graptolites.

B.D. Webby, Sydney: Ordovician geological evolution of Australia, especially aspects of New South Wales 'island-arc' palaeogeology. Patterns of worldwide diversification and provincialism of the earliest corals, stromatoporoids and sponges.

ORDOVICIAN REVIVAL ALONG THE HIGHLAND BOUNDARY FAULT IN SCOTLAND

For many readers, news of Ordovician fossils in the Highland Border Complex (HBC) may conjure up feelings of déjà vu. Certainly sparse Ordovician faunas have been reported sporadically from a variety of Highland Border rocks ever since the earliest discoveries during the first decade of this century. On the basis of this palaeontological evidence, a loosely-defined Ordovician age was, until recently, widely accepted. An (?)Arenig age was attributed to the HBC in many papers, colouring much geological theorising throughout the present century. (To avoid confusion it is worth pointing out that the term 'Complex' has been adopted in place of the widely-used but clearly inappropriate 'Series', and that the rocks of the Highland Border Complex crop out along the line of the Highland Boundary Fault.)

Many readers not closely involved with Scottish geology may, however, be unaware of recent interpretative upheaval, in particular dealing with the age, provenance, and tectonic history of the HBC. The basis for this upheaval lay in a mid 1960's reappraisal of the admittedly scrappy fossils which had up to then been cited as evidence of an Ordovician age. The consensus was that these fossils were not diagnostic of the Ordovician, but indicative only of a Early Palaeozoic age. As a result the well-established Early Cambrian age for the Leny Limestone became the only reliable age datum then available for the entire Complex. A recent reinterpretation of Highland Border history, based primarily on structural criteria, went on to suggest that these rocks were in fact part of the Pre-Cambrian to Cambrian Dalradian Supergroup to the north, and represented a late stage basin development within the main Dalradian Basin (Henderson & Robertson 1982). Their present position, along the line of the Highland Boundary Fault bounding the southern margin of the Scottish Dalradian, was explained by southward thrusting associated with early deformation phases of the Grampian Orogeny. Such a suggestion had certain attractions, not the least being to tidy up a problematical group of rocks not previously incorporated meaningfully into a regional tectonic synthesis. By this interpretation, however, the Highland Border rocks had to have been deposited by Middle Cambrian at the latest because of radiometric age constraints on the timing of Grampian structural events including the thrusting thought to have transported them southwards.

However this theory was subsequently proved untenable for at least one Highland Border unit when a diverse silicified fauna (trilobites, brachiopods, ostracods, etc.) of undoubted Arenig age was recovered from a constituent lithology, the Dounans Limestone (Curry *et al.* 1982). Rocks of this age could not have been moving as a tectonic package in the manner suggested by Henderson & Robertson (i.e. in the Cambrian). The Dounans Limestone fauna is extremely sparsely distributed, and was only discovered by etching bulk samples in dilute acid. Currently over 5,000 kgs of Dounans Limestone have been digested, and so sparse is the fauna that more material is currently being processed.

The Dounans Limestone is, however, only one of the many small disjointed, lithologically-variable, and predominantly fault-bounded units which collectively make up the HBC. In such terrain datable fossils constitute the only viable hope of establishing a reliable lateral correlation across the Complex, which is essential for tectonic interpretations. As such the success of the Dounans investigations prompted a greatly expanded programme of palaeontological prospecting, especially as bulk sampling and acid etching techniques have never previously been applied in Highland Border studies. This work represents a contribution to a co-operative research programme based in Glasgow (with NERC funding) investigating many aspects of Highland Border stratigraphy, sedimentology and geological history (participants: B.J. Bluck, C.J. Burton, G.B. Curry, J.K. Ingham and Alwyn Williams). A series of progress reports are due to be published in the *Transactions of the Royal Society of Edinburgh* during 1984 (the proceedings of the Bicentenary Symposium

on the "Deep Geology of the Midland Valley of Scotland and Adjacent Regions", Edinburgh, Oct. 1983). However it would seem appropriate to briefly summarise herein the current status of this research, especially as the results are of direct interest to readers, and may not otherwise become widely disseminated for some time yet.

The most significant result has been the recovery of a range of macro- and microfossils from a wide variety of Highland Border carbonates and clastics previously considered unfossiliferous. All of these fossils are of Ordovician age, and the HBC is now known to range in age from Arenig up to Caradoc/Ashgill. On the basis of this data we interpret the HBC as the tectonically dismembered remnants of a substantial Ordovician marine basin which developed discrete from the Dalradian basin. The regional setting of this Highland Border basin is not as yet fully resolved and it may indeed be equivalent to the South Mayo Trough in western Ireland. While such a suggestion is speculative we do believe that the present juxtaposition of Dalradian, HBC, and Midland Valley in Scotland was not achieved until Upper Palaeozoic times. Consequently the possibility of considerable lateral movements along the Highland Boundary Fault zone must be considered. There does seem to be some evidence for early transcurrent movements in this zone, but their nature and extent has yet to be determined. The relationship of the Cambrian Leny Limestone also requires clarification; it crops out adjacent to undoubted Dalradian lithologies and may well be an isolated sliver from that Supergroup, but the contact is problematical.

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Curry, G.B., Ingham, J.K., Bluck, B.J. & Alwyn Williams, 1982. The significance of a reliable Ordovician age from some Highland Border rocks in Central Scotland. Jour. geol. Soc. London, 139 (4), 453-456.

Henderson, W.G. & Robertson, A.H.F., 1982. The Highland Border rocks and their relation to marginal basin development in the Scottish Caledonides. Jour. geol. Soc. London, 139 (4), 435-452.

NEW JOURNAL

"Palaeontologia Cathyana" is a new English journal of palaeontology and stratigraphy to be published irregularly by Nanjing Institute of Geology & Palaeontology, Academia Sinica. Editor-in-Chief is Lu Yanhao.

First issue was planned to appear in latter part of 1983, and to contain articles on Cambro-Ordovician trilobites by Lu Yanhao and Qian Yiyuan, on Ordovician to Silurian graptolites from Tibet by Mu Enzhi and Ni Yunan and on the Ordovician-Silurian boundary in China by Mu Enzhi. The 430 page issue is available for US\$120, from the International Distributing Section, Science Press, 137 Chaoyangmennei Street, Beijing, P.R. China.