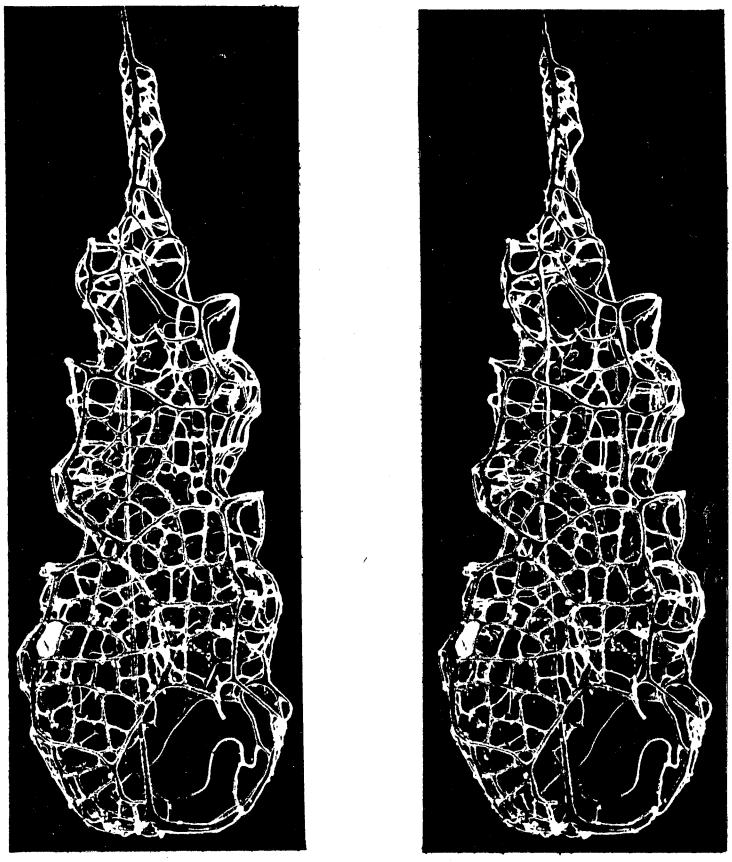
SILURIAN TIMES

No. 4 January 1996

A NEWSLETTER OF THE SILURIAN SUBCOMMISSION



SUBCOMMISSION ON SILURIAN STRATIGRAPHY

INTERNATIONAL COMMISSION ON STRATIGRAPHY

INTERNATIONAL UNION OF GEOLOGICAL SCIENCES

COVER PICTURE: Stereopair photograph of the Wenlock retiolitid graptolite *Eisenackograptus eisenacki* (Obut and Sobolevskaya) from the Cape Phillips Formation, Arctic Islands, Canada.

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EDITORIAL

I would like to welcome you to Silurian Times no. 4, a letter of the Subcommission on Silurian Stratigraphy of the International Stratigraphic Commission. It is intended for those interested in Silurian rocks and fossils worldwide. This edition, is the third for which items were solicited from all those on the mailing list. The number of responses for no. 4 was 109. For this issue, all those on the mailing list for no. 3, as well as those who submitted for the first time, receive an issue. This is to ensure that the maximum number of individuals receive the final announcement for the 2nd International Symposium on the Silurian System, to be held at the University of Rochester, August 4-9, 1996.

This is my first newsletter, having recently taken over from the very able hands of Godfrey Nowlan. Having now discovered discovered how much time is required to produce a newsletter, I would like to personally thank Godfrey for his past efforts, as well as for his very valuable contributions as Secretary of the Subcommission.

You will note a number of changes in this issue as compared with the previous ones. Specifically, a single column format and smaller font size have been used. The reasons for this are very simple: economics! By using the full page and smaller print, the total number of pages has been reduced by about one-quarter to one-third, thereby reducing mailing costs, a very serious consideration in these times of limited funding. I would be interested in learning your reactions.

Information for this issue was compiled from regular mail, fax and E-mail. The use of E-mail was especially appreciated, since your submission could be directly down-loaded into the newsletter file. Formatting was then very simple. I strongly encourage those of you having an E-mail facility to make use of it in the future. I would also ask you to keep me informed if you acquire E-mail and to let me know your address, or of a change in your address.

A.C. Lenz

NOTES TO CONTRIBUTORS

Contributions should be in English, typed single-spaced, and sent by mail, fax, or E-mail to:

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University of Western Ontario
London, Ontario
CANADA N6A 5B7

Phone: 519 661 3195
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E-mail: aclenz@julian.uwo.ca

For longer conributions, if not via E-mail, it would be appreciated if a copy could be sent on a 3.5" diskette. I am able to read Word for Windows as well as Wordperfect, but if in doubt please also send a version in ASCII. Next year, when requesting information for newsletter no. 5, I will send more specific instructions on formatting style, especially for publications

ANNUAL REPORT OF THE SUBCOMMISSION ON SILURIAN STRATIGRAPHY (SSS) OF THE INTERNATIONAL COMMISSION ON STRATIGRAPHY FOR 1995

1. **Title of constituent body**
   Subcommission on Silurian Stratigraphy (SSS)

2. **Overall objectives**

a) Elaboration and improvement of the standard global stratigraphical (SGS) scale for the Silurian System, including definition of boundaries and the selection of Global Stratotype Sections and Points (GSSP) under IUGS guidelines.

b) Refinement of international correlation within the Silurian System, with particular emphasis on development of a simplified scheme of zonal fossils (left-hand column) for global applications.

c) Stimulation of research and international cooperation, with particular emphasis on the coordination of working groups focused on various zonal fossils such as graptolites, conodonts, chintinozoans, etc.

d) Evaluation and integration of new approaches to the correlation of Silurian strata on a global scale.

The Subcommission's assignment of determining GSSPs on a series and stage basis is nearly complete. The final task of subdividing the Pridoli Series into two stages is all that remains. With a proposal from the Czech Republic in hand, the debate on this issue will move ahead with a decision expected at the next biennial meeting in 1996.

Completion of this phase of work is well ahead of nearly all other subcommissions, giving us the luxury of looking ahead to other tasks deserving international attention. Foremost among these is the development of a simplified left-hand column of biostratigraphic zones which may be applied to the development of correlation charts with global coverage. A graptolite working group was activated in 1994 and other study groups will be coming on line. In order to better integrate our biostratigraphic correlations, we are particularly anxious to foster a closer working relationship among specialists studying different groups, such as the graptolites and the conodonts.

A variety of auxiliary approaches to the correlation of Silurian strata need to be tested and evaluated with regard to their global significance. Eustatic sea-level fluctuations and climatic cycles are among the possible patterns to be systematically researched in our ongoing program to produce global correlation charts. Another important theme is the relationship between stratigraphy and paleogeography. These issues will be highlighted during the 2nd International Symposium on the Silurian System, which coincides with the next biennial meeting of the SSS in 1996.

3. **Organization**

The SSS is a subcommission of the Commission on Stratigraphy, consisting of 17 Voting and 60 Corresponding members. Voting members are selected to achieve regional representation and a balanced stratigraphic expertise. Corresponding membership is open to all individuals demonstrating a commitment to scholarship in Silurian stratigraphy.

Two important changes in personnel occurred in 1995. By unanimous agreement of the voting members, Mario V. Caputo (Universidade Federal do Para, Brazil) was selected as a voting member to fill the place vacated by Hermann Jaeger (1929-1992). Unanimous consent also was given by the voting members to transfer the office of secretary from Godfrey S. Nowlan (Geological Survey of Canada) to Alfred C. Lenz (University of Western Onatrio). We are very grateful to Godfrey for his faithful service as secretary since 1992 and for his outstanding job as the founding editor of "Silurian Times."

Officers

Chairman: M.E. Johnson (Dept. of Geology, Williams College, Williamstown, Massachusetts, 01267 USA)
Secretary: A.C. Lenz (Department of Geology, University of Western Ontario, London, Ontario N6A 5B7, Canada)
Contact with Subcommission on Geochronology: L.R.M. Cocks (British Museum of Natural History, London, United Kingdom)
The SSS Treasury is maintained as a separate organizational account at Williams College.

4. **Extent of national/regional/global support of projects**

Membership in the SSS is represented by specialists from 28 countries and from all continents except Antarctica. Most of the major regions of the world with extensive exposures of Silurian strata are covered, especially North America, Europe, Russia, China, South America, and Australia. We have enjoyed significant national-based support for the organization of symposia and field meetings: Austria (1994), the Czech Republic (1992), Estonia (1990), Australia (1986), the Ukraine (1983), Norway (1982), Canada (1981), and the United Kingdom (1979, 1989).

Funding in support of the next biennial meeting in 1996, to coincide with the 2nd International Symposium on the Silurian System, is being explored with corporate sponsors, the Petroleum Research Fund (American Chemical Society), and other collegiate sponsors in the U.S. and Canada.

5. **Interface with other international projects**

Due to the significant occurrence of thelodonts in Silurian strata, members of the SSS participate in IGCP Project No. 328 (Paleozoic Microvertebrate Fossils). Other members are very active in the IPA international research groups on graptolites and conodonts.

6. **Accomplishments and products generated in 1995**

With press run of 171 mailings, the third issue of "Silurian Times" -the official newsletter of the Silurian Subcommission (edited by Secretary Nowlan) -was circulated to all subcommission members as well as a broad constituency of Silurian researchers around the world during the Spring of 1995. Secretary Alf Lenz has taken over the duties of editor from Godrey Nowlan and future issues will be mailed out on an annual basis near the beginning of each calendar year.

Chairman Johnson circulated a set of detailed instructions to keynote speakers in the theme session on paleogeography scheduled for the James Hall Meeting (2nd International Symposium on the Silurian System). Reports are being coordinated by 16 leaders representing research teams working on geographic interpretations of all the Silurian paleocontinents: North America (7 teams), Avalonia (1 team), Baltica (1 team), southern Europe (1 team), Siberia (1 team), Kazakhstan (1 team), north and south China (1 team), and Gondwana (3 different teams representing Australia-India, Africa, and South America). Coordinating committees are hard at work preparing guidebooks for a pre-conference field trip along the axis of the Appalachian Basin and a post-conference field trip through the mid-West.

7. **Chief problems encountered in 1995**

As 1995 ran its course between scheduled biennial meetings, few serious problems were encountered. Subscription of funds in support of international meetings was the main preoccupation of the chairman in 1995. Overtures to the U.S. National Science Foundation, NATO, and the Society of Economic Geologists for conference support were rejected. Other proposals before private corporations, the Petroleum Research Fund (American Chemical Society), and potential collegiate sponsors are in place.

8. **Work plan for 1996**

a) Creation and mailing of the final circular for the 2nd International Symposium on the Silurian System, including forms for abstracts and payment of conference fees. The conveners (M.E. Johnson and C.E. Brett) aim for an early February delivery with a late May deadline.

b) Production of the fourth issue of "Silurian Times"

9. **Potential funding sources outside IUGS**

Some oil and gas companies, as well as other geology-based industries, are being approached for funding in support of field excursions held in conjunction with the 2nd International Symposium on the Silurian System, for which the SSS serves as the primary organizational sponsor. A grant proposal is before the Petroleum Research Fund (American Chemical Society) under its Scientific Education Program for coverage of expenses by some keynote speakers at the James Hall Meeting.

10. **Anticipated work plan for 1997-1998**

Except for possible subdivision of the Pridoli Series into stages, the critical work of the SSS has been accomplished in terms of agreements on global stratotype sections and points. Future work will focus on the resolution of detailed zonal correlation and the development of correlation charts which take into account alternative or supplementary means of correlation. Emphasis will be on the practical results of enhanced correlation, especially with regard to paleogeographic mapping. General plans for the next several years include:

1997: Editing of the volume "Silurian Lands and Shelf Margins" with extensive correlation charts (including sea-level curves and information reflecting climatic variation) supplemented by paleogeographic maps on various regional, continental, and global scales.

Elaboration of high-resolution graptolite zonations on a global basis, through work by the task force led by Tatyana Koren.

Annual production of "Silurian Times."

1998: Final preparations for the biennial field conference (location to be determined at the biennial meeting in Rochester in 1996).

Continued work by the task force on "High-resolution Silurian Graptolite Zonation" led by Tatyana Koren.

Annual production of "Silurian Times."

11. **Financial statement for 1995**

a) Income (U.S. dollars)	
1. Carryover from 1994	$ 0.00
2. 1995 ICS subvention	390.00
3. Personal contributions 102.24	
Total operating funds	492.24
b) Expenditures	
1. Postage	492.24
Total expenditures	492.24
Net balance at the end of 1995	$ zero

12. **Budget for 1995**

a) Subvention toward production and mailing of newsletter..... 500

b) Subvention in support of travel to the Rochester Meeting (1996)..... 1,000

ALLOTMENT REQUESTED FROM ICS FOR 1996 - $1,500

M.E. Johnson

CHAIRMAN'S CORNER

The interval between biennial field meetings sponsored by the SSS are supposed to be relatively calm ones for your chairman, but 1995 was a busy year. A ballot was organized early in the year to canvass the titular membership on three important issues of business: 1) ratification of Alfred C. Lenz as the new SSS secretary and editor of "Silurian News", 2) ratification of Prof. Mario V. Caputo (Brazil) to fill a vacancy in the voting membership, and 3) ratification of the concept of our organization as a permanent body "so long as an active membership shows an interest in solving global problems and continues to explore new ways to correlate Silurian strata." Balloting was officially completed on August 31, 1995 and it is my pleasure to report the results to the membership at large. Much of the year also was engaged in fund raising for the 2nd International Symposium on the Silurian System, the primary sponsor of which is the SSS. Efforts continue as this report goes to press, and will be continued right up to the opening day of the James Hall Meeting on August 4, 1996 in Rochester, N.Y.

By unanimous agreement, Alf Lenz won approval as the new SSS secretary and newsletter editor. This issue of "Silurian Times" comes to you as a result of his capable management and good cheer. We all owe a debt of gratitude to Godfrey Nowlan for his contribution as the founding editor of "Silurian Times" and careful stewardship of the SSS secretariat from August 21, 1992 through Sept. 1, 1995. It was Godfrey's goal to establish a newsletter affiliated with the SSS, one open as a global forum and source of information on who is doing what across the full stratigraphic spectrum of the Silurian System. He successfully guided the newsletter through its first three annual issues.

Also by unanimous agreement, the voting members of the SSS gave their approval to the nomination of Mario V. Caputo (Universidade Federal do Para, Belem, Brazil) as a voting member filling the seat left vacant by our departed colleague Hermann Jaeger. Mario joins us as the first home representative of Silurian affairs in South America and he brings with him a specialized knowledge of mid-Paleozoic glacial epochs in the southern hemisphere. We welcome his active participation and hope he may better educate us regarding the far-reaching paleoenvironmental effects of Gondwanan glaciations.

An issue of much concern to me over the last two years has been the notion that once the SSS completed its primary mission of erecting global stratotype sections and points (GSSPs) for the Silurian System, it ought to go out of business. The unanimous decision reached by the voting members of the SSS that we should remain a permanent body sends a strong

message to our parent organization, the International Union of Geological Sciences. That sentiment was carried in advance to the Advisory Board on Research Development of the IUGS on July 25, 1995 by Prof. Jurgen Remane, Chairman of the International Commission on Stratigraphy. Not only has the continued existence of the SSS been challenged, but that of our immediate parent organization, the ICS. It appears that funding levels for the next year, in any case, will not be further eroded.

My most difficult task in 1995 was to aggressively pursue opportunities for funding the James Hall Meeting and associated workshop on "Silurian cycles." In May it became clear that the USD $20,000 grant proposal I submitted to the U.S. National Science Foundation was in trouble, despite favorable reviews from an advisory panel. The same economic constraints affecting Canada and the Canadian Geological Survey, where Godfrey Nowlan makes his home, also afflict the USA generally and the NSF in particular. The success rate of proposals in the Geology and Paleontology Section of NSF fell below 15% during the first funding cycle of the year, and no funds were earmarked for conferences. My appeals for funding from the Scientific Affairs Division of NATO and the Economic Geologists Foundation also were rejected. Happily, I am able to report that USD $10,000 is in hand from a development fund at Williams College and the "Scientific Education" account of the Petroleum Research Fund (American Chemical Society). Another $2,000 is pledged by an oil company employing one of our corresponding members. These funds make it possible for some of the keynote speakers to attend the James Hall Meeting and participate in the associated field trips.

By the end of June, a detailed set of instructions went out to 16 different team leaders, or continent masters, representing all the major Silurian paleocontinents and marine shelves thereof. It is anticipated that the major theme session on "Silurian Lands and Shelf Margins" at the James Hall Meeting will be highly informative with a broad and unprecedented data base assembled in a uniform manor. Interest in the open workshop on "Silurian cycles" also has been enthusiastic.

This issue of "Silurian Times" carries the final circular for the 2nd International Symposium on the Silurian System. Respond promptly by returning the appropriate forms and come to Rochester, N.Y. in 1996! The organizing committee has worked hard to put together an outstanding program, including pre- and post-conference field trips. We look forward to seeing you.

FINAL ANNOUNCEMENT AND CALL FOR ABSTRACTS

2nd International Symposium on the Silurian System

The James Hall Meeting

Sunday, August 4, 1996 to Friday, August 9, 1996

Sponsored by: Subcommission on Silurian Stratigraphy (under the International Commission on Stratigraphy and International Union of Geological Sciences)
Co-sponsored by: Williams College
The University of Rochester
Petroleum Research Fund (American Chemical Society)

On -site registration and housing check-in will be conducted from 10:00 a.m. to 6:00 p.m. on Sunday, August 4th, at the Susan B. Anthony Residence Halls of the University of Rochester. On Monday, registration desks will be open from 8:00 a.m. to 3:00 p.m. in the Red Lounge of Hutchinson Hall.

Program

A poster session devoted to the workshop on "Silurian cycles" will be open for informal viewing and discussion with participants on Sunday from 1:00 - 5:00 PM. The workshop will be concluded Sunday evening with a round-table discussion following deli and bar service. Volunteered posters are welcome. If content is essentially new, however, oral presentations may be encouraged during the regular sessions of the meeting.

The main theme session is on the topic of "Silurian Lands and Shelf Margins" which will address the fundamental stratigraphic architecture and paleogeography of the principle Silurian continents. Invited keynote speakers include Dr. Rong Jia-yu (China), Drs. Yuri Tesakov and Evgeny Yolkin (Siberia), Dr. Tatyana Koren (Kazakhstania), Drs. Dimitri Kaljo and Michael Bassett (Baltica), Dr. Jiri Kriz (southern Europe), Drs. L.R.M. Cocks and W.S. McKerrow (Avalonia), Dr. Philip Legrand (African Gondwana), Dr. Mario V. Caputo (South American Gondwana), and John A. Talent (Australian and Indian Gondwana). In addition, there will be several presentations on the subregions of Silurian North America (Laurentia), featuring invited speakers such as Drs. James E. Barrick, Carlton E. Brett, Paul Copper, Timothy A. De Freitas, Donald G. Mikulic, David C. Roy, Peter M. Sheehan, and Brian J. Witzke. Paleogeography sessions will be scheduled for 50-minute presentations during half days on Monday, Tuesday, Thursday, and Friday.

Volunteered abstracts will be accepted for two special sessions: 1) Silurian recovery from the Ashgillian extinction (broadly interpreted to include events throughout the Silurian) and 2) Silurian economic geology. Volunteered papers are encouraged on all other aspects of the Silurian System, including paleontology (systematics), paleoecology, stratigraphy, geochronology, and paleogeography. All sessions will be scheduled for 15-minute presentations during half days on Monday, Tuesday, Thursday, and Friday.

The meeting will include a one-day break on Wednesday for a field trip to Niagara Falls. Significant Silurian exposures will be visited and the tour will include an excursion on the Niagara River. A box lunch will be provided. Time will also be devoted to significant Silurian outcrops in Rochester.

Letter of Invitation

If an official document is needed to confirm participation or help to arrange funds for travel and attendance at the meeting, please write to Markes E. Johnson, Department of Geology, Williams College, Williamstown, MA 01267, U.S.A.

Registration

You may duplicate the form below and circulate it to colleagues wishing to receive complete registration materials for the 1995 James Hall Meeting. **Please note** that all subscribers to the newsletter will receive a separate mailing with complete registration and housing/meals information in late January or early February, 1996. For reference, registration fees are as follows:

Professional:	$200 USD
Enrolled student:	$150 USD
Guest (social events only):	$100 USD

Late registrants will be charged an extra $25 fee; see following.

Payment for registration and on campus accommodations must accompany the returned original registration forms; forms received without payment cannot be accepted. Payment must be in US dolars by check or money order made payable to the University of Rochester. All registrations received by June 15 will be acknowldeged; additional information regarding check-in, airport shuttles, etc. will be included in the acknowledgment. A receipt noting your payment will be in the packet of materials you receive when you arrive.

Registrants who cancel their registration by June 10 will be sent a refund of the amount paid less a $50 handling fee. No refunds will be made for cancellations received/requested after June 10th.

Late registrations [after June 1] shuld include the late fee noted above. To minimize confusion, please do not mail late registrations after June 15th. On site registration service will be provided, but availability of housing/dining service is not guaranteed for late and walk-in registrants.

Please send me a complete conference registration packet for the James Hall Meeting, including information on the housing/dining plan at the University of Rochester, local hotel lists, etc. Please type or print legibly.

Name _____ Phone (___)

Address _____

_____

City _____ State _____ Country _____ Zip _____

Mail or fax this form to:
University Conference & Events Office
Box 41 Administration Building
University of Rochester
Rochester, N.Y. 14627
Fax# 716-275-8531

Accommodation Information

The organizing committee of the 2nd International Symposium on the Silurian System has negotiated a favorably priced room and board package for participants of the James Hall Meeting in the residence halls and dining center on the campus of the University of Rochester. Residence hall rooms come with all linens, soap, and glasses; each has a phone with free local service. Rooms are not air conditioned, though there are air conditioned lounges in the hall. Dining service will be provided in the Douglass Center; service is cafeteria style with unlimited second servings. Guests will find a variety of foods on the daily menu, from light fare to salids to full meals.

The special package plan for rooms and meals are available to participants who register by June 1 as noted below. The rate includes lodging from August 4-10 and all meals from breakfast Monday to breakfast Saturday. **Note** that the Sunday reception/buffet, the Niagara Falls dinner and the final banquet are included in the general conference registration fees and not the housing/meals package.

Single occupancy --Professional	$200.00 USD
Double occupancy --Professional	$180 [per person] USD
Double occupancy --Student	$160 [per person] USD

-Model Abstract-

ABSTRACT PREPARATION INSTRUCTIONS SHOWING THE FORMAT, USE OF UPPER AND LOWER CASE LETTERS, AND OVERALL STYLE

JOHNSON, Markes E., Department of Geology, Williams College, Williamstown, Massachusetts 01267, U.S.A.; BRETT*, Carlton E., Department of Earth & Environmental Sciences, Hutchinson Hall, University of Rochester, Rochester, New York 14627, U.S.A.

Accepted abstracts will be printed without reduction on pages 8.5 x 11 inches in size. The abstract should be camera-ready (crisp black print without smudges). All text and illustrations must fit within a column no wider than 16.5 cm. The left-hand margin of the abstract should begin 2.5 cm from the side of the page. Abstracts may be submitted on A-4 paper size, so long as these measurements are strictly adhered to. Type size must be no smaller than 12-pitch elite or 10-point print on a conventional typewriter (or laser printer front that corresponds to this size). In order to promote some degree of uniformity to the abstracts volume, we recommend using a Times Roman font. All abstracts should be in English.

All lines of the TITLE should be flush with the left margin and typed in upper case (expect for chemical abbreviations such as Ca or CO_3). Leave one blank line following the title.

All lines of AUTHORS should be flush with the left margin. The LAST NAME of the first author should be flush with the left margin. The LAST NAME of the first author should be capitalized, set off with a comma, and followed by the first name and middle initial, where appropriate. Notations such as "Jr." or "III" should be set off with commas. Next, use commas to separate an address at which the author may be contacted. For two or more authors, follow the same formate including capitalization of each author's last name as shown above. Separate the names with a semicolon. The presenter of an oral paper should be indicated with an asterisk. Leave one blank line following the author section.

Indent the start of the first and each succeeding paragraph by three spaces. No blank lines should appear in the abstract except at the end or above a figure.

Literature citations are discouraged. If absolutely necessary, please copy the style followed in the Geological Society of America Bulletin.

ILLUSTRATIONS such as graphs and formulae must be printed with the text of the abstract by use of laser graphics or pasted smoothly and securely onto the abstract page. Frosted tape applied carefully around the edges of mounted illustrations will minimize edge outlines. Photographs will not be accepted.

The length of the text should be limited to no more than 400 words.

Do not fold the abstract. Mail the original and two review copies to: **Markes E. Johnson**, Department of Geology, Williams College, Williamstown, Massachusetts 01267, U.S.A. The deadline for receipt of abstracts is **Friday, May 31, 1996.**

Pre-Conference Field Trip: The Appalachian Basin

As described in the 1995 issue of "Silurian Times," the pre-conference field trip will follow the cratonic margin of the Silurian land mass, Taconia, from Birmingham, Alabama to Rochester, New York. Participants will assemble on Monday, July 22, 1996 at the airport in Nashville, Tennessee. The trip will conclude Saturday evening, August 3, 1996 in Rochester, New York. Space is limited to between 30 and 40 participants, including field-trip guides and van drivers. The trip is being run in six consecutive segments, including one day in central Tennessee, two days in Alabama and NW Georgia, 3 days in eastern Tennessee and central Virginia, two days in northern Virginia and Maryland, two days in Pennsylvania, and two days in New York State. Trip leaders include: Tom Broadhead, Tim Chowns, Scott Brande, Steve Driese, Rick Diecchio, Ed Cotter, Markes Johnson, and Carl Brett.

The full cost of the trip, including lodging and meals is USD $750.00

Reservation for a place on the Appalachian field trip is on the basis of first in line, first served. Partial payment of the trip fee in the amount of USD $400 payable by a check drawn on a United States bank or a money order in United States funds must accompany your reservation. If a receipt is needed, please so state in a cover letter. The balance of the trip fee will be due on July 22 in Nashville.

Please type or print neatly

Registration Form

The Appalachian Basin Field Trip

Name: _____

Address: _____

_____

City _____State _____Country _____ Postal Code _____

Down-payment: USD $400 Balance due: USD $350

To check if space is still available, contact Markes Johnson by fax at (413) 597-4116 or by e-mail (markes.e.johnson@williams.edu)

Make checks payable to **Williams College** and send directly to **Markes E. Johnson**, Department of Geology, Williams College, Williamstown, Massachusetts 01267, U.S.A.

Post-Conference Field Trip: Silurian of the Central United States

The post-conference field trip will provide and overview of the entire Silurian System in the central U.S., as well as demonstrate relationships between Ordovician and Devonian strata. Participants will visit such famous localities as the Thornton Reef, the Waldron Shale, the Waukesha soft-bodied Lagerstätte and the Niagara Escarpment, in Ohio, Indiana, Illinois and Wisconsin. The sequence stratigraphy of Silurian epicontinental seas and carbonate platforms and their relationship to the Michigan and Illinois basins and the Cincinnati Arch will be emphasized. Conodont, brachiopod and graptolite biostratigraphy will be addressed. In addition, the history of the paleontological and geological studies of the region, including classic works by James Hall, Thomas Chamberlin, Robert Shrock, Heinz Lowenstam and others, will be discussed; much of this focussed on Silurian reefs of the Great Lakes area, among the first reefs studied any where in the world. These classic reefs will be highlighted on the trip, and participants will have the opportunity to compare the composition, paleoecology and taphonomy of reef and non-reef biotas. Donald Mikulic and Joanne Kluessendorf will be the main trip leaders. The excursion will begin on Sunday, August 11, 1996, in Cincinnati, Ohio, and conclude on Tuesday, August 20, 1996, in Chicago, Illinois. Space is limited to between 30 and 40 participants. The full cost of the trip is $1000.00 (U.S.), which includes lodging, meals, and travel by motor coach. A reduced or subsidized fee may be available for overseas participants lacking funds.

If you are interested in attending this field trip, please complete the form below and return it to Donald Mikulic, Illinois State Geological Survey, 615 E. Peabody Dr., Champaign, Illinmois 61820, USA, no later than March 1, 1996, to receive further information. Participation will be selected on a first-come, first-serve basis.
Fax: 217 333 2830. Phone: 217 244 2518.

Registration form
Silurian of the Central U.S. Field Trip

Name:_____
Address:

Institution:_____
Street:

_____

City:_____ **State/Country**_____ **Postal Code**_____

NEWS AND VIEWPOINTS

GRAPTOLITE INDEX SPECIES AND OTHER BIOZONAL ILLS: R.B. Rickards

In a recent contribution (Silurian Times no. 2, pp. 7/8) I commented upon some aspects of the Primary Biozones concept. In this note I'd like to focus on some other principles of graptolite correlation which worry me. The first of these is that of the Index Species. Now this has been around a long line, and its use varies between, at the one extreme, simply a label, a name, of a Biozone, to the idea that if the Index Species is not present the Biozone is unrecognizable. In addition, some workers seem to feel that the total range in time of the Index Species defines the Biozone.

Elles and Wood (1901-18, p.515) in their classic monograph used the Index Species merely as a label. They chose the species on the basis that it was typical/common/ restricted: but they state quite clearly that the assemblage, the unique assemblage in time, is actually what defines what we now call an (Assemblage) Biozone (see Rickards, in press).

In some cases the Index Species or, as I prefer to call it, the name species, will be restricted to the Biozone. On current evidence the *riccartonensis* Biozone has the name species restricted to the Biozone and occurring throughout it. Should *M. riccartonensis* be discovered part way down the previous Biozone there is no need to change the definition of the Biozone to embrace that new range, because in order to make the statement that *M. riccartonensis* occurs part way down the underlying Biozone, one has effectively correlated quite precisely. So in this hypothetical example we now have three useful correlative labels, not two.

In a number of papers Jaeger (e.g. Barca & Jaeger, 1990) has taken a not unrelated line to this matter of the total range in time of his Index Species. Thus he states (op. cit.), p.572) " It may be stated again that the indices of the three basal Silurian zones of *Akidogr. ascensus, Akidogr. acuminatus* and *Cystogr. vesiculosus* with overlapping ranges, were found on the same piece of lydite and even on the same bedding plane. As the various zones are strictly defined by the first appearance of their respective zone fossils, this sample has to be assigned to the *vesiculosus* Zone, ..."

Clearly this is nonsensical. Take it to its logical conclusion: Lenz and Melchin (1989) recorded the late Wenlock Index Species *C.* aff. *lundgreni* from the earliest Wenlock in the Canadian Arctic. Does this now mean that the whole of the Wenlock should be referred to the *lundgreni* Biozone? Of course, it does not, but that is the principle outlined above in Barca and Jaeger.

Jaeger once explained to me another aspect of this Index Species idea, at least the way he conceived it. It is that each species, arbitrarily defined as it is, does have a finite range in time, for example *P. dubius* is widely accepted as ranging from the upper half of the *riccartonensis* Biozone into the latest Ludlow. Use of species with proven short time ranges could be invaluable in correlation. This is no different from the acrozone or total range zone concept and, in fact, is already widely used (*riccartonensis* Biozone could be more aptly termed the *riccartonensis* Acrobiozone, for that is what it is, even though the assemblage within that range is unique and easily recognisable without the name fossil).

However, a further implication of the total range Biozone is that it may be related to evolutionary lineages. About the Wenlock/Ludlow boundary current work is showing that a whole series of short-lived, related species occurred. The problem with subdividing evolutionary lineages (potentially a very powerful correlative tool) is that unlike that identification of an individual species, where quite often there is an easy consensus amongst researchers, there may be little agreement as to what evolved into what. All these matters are very subjective, but the identification and range of a graptolite species is, at present, more useful than relying on debatable lineages; thus the range in time of *M. deubeli* is useful; whether it evolved from *M. praedeubeli* is less certain. In the future this may change, of course, as biostratigraphic precision increases yet further.

Whichever way I look at it I return to the (assemblage) Biozone concept as the most useful, reliable and powerful tool of correlation with graptolites, whilst accepting that Acrobiozones and other types will continue to have their uses at times and in certain places. In short, we should use as many species as possible to effect correlative precision. Koren' (pers. comm.) recently reminded me of another facet of the Assemblage Biozone concept, namely that identification of the faunal assemblage was not in itself sufficient to establish precisely the Biozone in a section, unless one also had the assemblages above and below it so that its base and top could be reasonably fixed. This may strike some workers as somewhat pedantic, but it does nonetheless allow an element of precision to be identified: thus one could have a *ludensis* assemblage or one could have a *ludensis* Biozone if the underlying *nassa* fauna and the overlying *nilsonni* fauna were in sequence. It is, perhaps, an idea worth exploring further.

The final question I have to ask is just how precise can we get in the future? Hughes (1995) has shown that the average duration of a Wenlock (Silurian) graptolite zone is about 0.44 Ma. I have recently calculated that the mean duration of Silurian graptolite species is < 0.7 Ma, one of the shortest known. Put these two facts together and we end up subdividing the Silurian, in places, into units of well under 0.25 Ma. There may be an ultimate limit on the preciseness of correlation,

given that the present work is throwing up a great deal of information about the palaeobio-geographical distribution of Silurian species.

Lastly a plea. Can we abandon numerical labelling of graptolite biozones? Use of the old Elles & Wood (op. cit.) numbers serves only one purpose, and that is to show how much things have changed, how many more biozones there are! Names are much better, providing one does not worship them to the exclusion of sound principles.

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Lenz, A.C. & Melchin, M.J. 1989. Wenlock (Silurian) graptolite biostratigaphy of the Cape Phillips Formation, Canadian Arctic Islands. Cdn. J. Earth Sciences, 27, 1-13.

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NOT SUCH GOOD NEWS: R.B.Rickards and C.H. Holland

The 'Good news about the Silurian in Poland' (Teller and Urbanek 1995, *Silurian Times*, no. 3) is very welcome indeed, and we look forward to seeing the voluminous work to which they refer. Their preliminary note does raise several issues upon which we would like to comment.

The first concerns stratigraphical usage. Terms for time, such as early and late, should not be confused with chronostratigaphical (global standard) terms. Thus the 'stage' column in their table should show lower Ludfordian and upper Ludfordian.

Secondly, it should be pointed out that the incongruence of internationaly recognized chronostratigraphical boundaries with natural events in the sequence is inevitable for a number of reasons, of which the following number are two:

(a) the decisions on chronostratigraphical boundaries are taken democratically, by an established voting procedure amongst Titular Members of the Subcommission on Silurian Stratigraphy. Those who participated in such (often onerous) work must be aware that national prejudices play a part, as do prejudices as to preferred fossil groups. At the end of the day, decisions are made in consequence of arguments that are the more persuasive.

(b) the research into natural 'events' often *follows* the framework decisions of the subcommissions: in many respects these decisions are enabling decisions, because an agreed framework is provided, against which new data can be plotted. This gives rise to the recognition of the event. The *nassa* event was, of course, known before the decision; but the nature of the event was little understood, and has been much researched since.

Thirdly, we would remind Lech Teller that he was a Titular Member of the Subcommission on Silurian Stratigraphy during our eight-year programme to standardize Silurian stratigraphical classification. There were many meetings, both in the field and indoors; there were extensive discussions, in which all present always had their say to the fullest extent (views on the Polish boreholes and on sections in the Ukraine were put forward vehemently during such meetings); there was elaborate documentation; all present at the meetings took part in informal voting, the results of which were confirmed by strictly formal voting by Titular Members; decisions were presented subsequently to the Commission on Stratigaphy and eventually ratified by the IUGS. Far from underestimating the importance of graptolite faunas during our discussions, we were sometimes criticised for paying too much attention to them. The purpose of a global standard stratigraphy is to allow work in such exciting fields as recognition of natural events, palaeogeography, evolution, palaeoecology, etc., to continue under an internationally agreed language, so stable that it can be used with confidence by workers all over the world.

A COOPERATIVE STUDY OF THE SILURIAN MICROBIAL-APHROSALPINGID REEFAL BIOTAS OF THE URALS AND ALASKA: A.I. Antoshkina

The study was made in Syktyvkar in the Komi Republic, Russia by A.I.Antoshkina the senior scientific worker of the Institute of Geology (Syktyvkar), and Constance M. Soja. a professor at Colgate University, New York,USA 11-22 September 1995. 1.The general geology of the Urals and Alaska was discussed and compared, thin-sections and hand-samples of the Silurian rocks from fore-reef, back-reef, reef-flat, reef-crest, slope and basinal facies of the Pechora Urals and Alaska were studied. 2. The significant similarity of microbial and aphrosalpingid biotas was established. 3. The taxa, Hecetophyton sp., "Solenopora" filiformis, and Sphaerina congregata, widely known in Alaska, were for the first time found in the reefal deposits of the Urals. 4. Some differences between the Silurian in the Pechora Urals and Alaska were established: 1. The alga Renalcis is widespread in the Urals reefs but is not characteristic of Alaska reefs,and the problematic hydroid Fistullella is more characteristic of the Urals reefs. 2.The greatest similarity with the Alaska reefs is in the Ilych

River section (Northern Urals). Because of strong dolomitization and also absence of the alga Ludlowia and of aphrosalpingids, comparisons with the Silurian reefs at the Niyayu (Polar Urals) and Kozhim (SubPolar Urals) Rivers sections have not yet been established. Cooperative research and field geological work are planned for the near future.

ABOUT BOUNDARIES OF SILURIAN OF THE TIMAN-URALS REGION: A.I.Antoshkina

In the Timan-Urals region the Silurian deposits are encountered in numerous boreholes and throughout the Pechora Syneclise. Therefore, detailed lithological studies of these deposits, outcropping in the western Urals, Chernov, Chernyshev and Timan Swells, is important for solving some Silurian stratigraphy problems. Two of largest problems are the definitions of the O/S and S/D boundaries.

The current O/S boundary established from well log data, is placed between the terrigeneous-carbonate (=Horeiver Horizon) and carbonate (Yaptikshor=Saluka suites) units (Resheniya 1987). However, this boundary level isn't in agreement with paleontological and sedimentological data discussed below. The abrupt replacement of the Late Ashgillian benthic communites of brachiopods Proconchidium-Holorhynchus and conodonts Aphelognathus-Belodina by Early Llandoverian Virgiana and Distomodus-Ozarkodina ones is observed within the rather homogenous Adak Series (=Yaptikshor suite+Dzhagal Horison) comprised of secondary organogenic dolomites (Opornye 1987; Antoshkina et al. 1989). Besides, there are facies changes at the O/S boundary. For instance, in the Kozhym River section (the Subpolar Urals), the Upper Ashgillian light-grey shoal dolomites with brachiopods Holorhynchus are overlain by the Lower Llandoverian black, deep-water shelf dolomites with abundant crinoid faunas. In the Chernyshev Swell (R.Usa, Malyi Adak) the O/S boundary beds are represented by clayey, lumpy-bedded limestones and dolomites. They are characterized by benthic communities, containing the Late Asghillian species of brachiopods Holorhynchus, rugose coral Palaeophyllum, tabulate coral Agetolites, conodonts Belodina and some endemic brachiopod species Idiospira , Latonotoechia , Virgiana. It is possible, that these beds may be considered the regressive part of the Uppermost Ashgillian sequence, that had been retained from Pre-Silurian erosion. The latter was developed in most of the shallow-water Upper Ashgillian basins as a result of the final fluctuation of the Late Ordovician glaciations. In other sections, the absence of these deposits accounts for the lithological similarity of the O/S boundary beds.

In the Choreiver depression (borehole 1 Vostochnyj Vosei) the O/S boundary is recognized in core by conodonts. The Late Ashgillian conodont Aphelognathus shatheri Sweet is succeeded by the Early Llandoverian conodont Ozarkodina oldhamensis (Rexr) within 1.10 m (depths 3908.25-3909.35 m). S.V.Melnikov (Martynov, Melnikov, 1993) regards the Oz. oldhamensis complex as the oldest Silurian form. The replacement of the complexes are marked within the organogenic buildups of the mud mound type where secondary dolomites with relict biohermal texture, algal lamination and stromatactis texture are interbedded. In the Chernaya River section (the Northern Timan) the Middle Llandoverian carbonate deposits of the Chernaya River suite rest on the eroded surface of terrigeneous rocks of the Ust'Chernaya River suite. The early Llandoverian age of the latter is only conditionally established (Reshenia 1987).

The S/D boundary is important for the correlation of oil-bearing Lower Devonian deposits and the dating new oil fields. In outcrops it is established that the S/D boundary deposits are characterized by both the changing of faunal assamblages and the abrupt specific and quantitative decrease in diversity. These facts are explained by significant facial diversity. In the western Subpolar Urals (R.Kozhim) the S/D boundary is at the base of a greenish clay bed (8-9 cm thickness), that overlies limestone gravelstones (5-7 cm thickness). The S/D boundary mudstones contain sparse Pridolian ostracods Signetopsis arborea Abush. and ostracods Diszygopleura sp., Knoxiella? sp. of the Lokhkovian age. In the Kolva Megaswell (borehole 51 Vosey, depth 3088 m) the S/D boundary coincides with an abrupt contact having erosional pockets (of up to 20 cm depth) between of the Pridolian greenish limestone conglobreccias and gravelstones and the Lower Lochkovian grey marls. A different fauna of the Pridolian brachiopods and ostracods occurs within of the conglobreccias debris. Lower Lochkovian brachiopods and ostracods are present within the grey marls and conglobreccia cement. In the Choreiver depression (borehole 23 Varknavtskaya, depths 4288-4292 m) the S/D boundary is characterized by surface erosional pockets (of up to 5-7 m depth) and impregnation of pyrite (2-3 mm thickness). It separates the Pridolian secondary dolomites with clastic textures, anhydrite nests from the Lower Lochkovian laminate muddy dolomites. In the Northern Timan (R.Velikaya) the S/D boundary is usually placed at the top of the continental terrigeneous deposits containing various vertebrate fossils (Reshenia 1987).

These facts provide evidence of a stratigraphic break at the S/D boundary level, the degree and amount of hiatus varying in the different parts of the Timan-Urals region. The gap was possibly connected with a regional tectonic uplift of the territory and to a eustatic fall of the Late Silurian sea level.

The strongly expressed evolutionary crises (a reduction in diversity) is thought to related to regressive cycles and intervals of abrupt climatic changes (glaciation at the Ashgillian, coolling at late Wenlock and Early Devonian). Their influence on the paleoenviroments and paleogeography is regarded as being considerable. At the Middle/Upper Llandovery

and Lower/Upper Ludlow boundaries, the gaps are recognized too. These gaps are of a smaller order, and are established at the mezocycle tops (Antoshkina, Besnosova,1987). Most of the gaps are expressed by surfaces that are interpreted as forming in subaqueous conditions where, because of constant wave agitation on the low gradient basin floor, no sediments accumulated. In deeper water parts of the basin, unconformable contacts are not observed, but they are marked by a facial shift and sometimes an accumulation of clay sediments took place.

Thus, in the Timan-Urals region O/S and S/D boundaries coincide with the erosional surfaces and the underlying Silurian and Devonian deposits were eroded to different degrees.

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NEW IGCP PROPOSAL (submitted by Mark Wilson) A project as described below, on Circum-Arctic Paleozoic Vertebrates, is being proposed to the IGCP. If you are interested in participating or if you may be able to help by providing locality information, logistics, rocks samples for processing, or acid residues that might contain vertebrates, please contact one of the project organizers.

TITLE: **Circum-Arctic Lower-Middle Palaeozoic Vertebrate Palaeontology and Biostratigraphy**

LEADERS: Dr. Mark V.H. Wilson, Department of Biological Sciences and Laboratory for Vertebrate Paleontology, University of Alberta, Edmonton, Alberta, T6G 2E9, Canada; FAX: 1 403 492 9234; E-MAIL: mark_wilson@biology.ualberta.ca or mark.wilson@ualberta.ca

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INTERNATIONAL PARTICIPATION: Researchers from Australia, Canada, Estonia, France, Germany, Latvia, Lithuania, Netherlands, Norway, Russia, Sweden, United Kingdom, and the United States have joined the project team so far.

BRIEF OUTLINE AND MAIN OBJECTIVES OF THE PROJECT

A major problem in Lower-Middle Paleozoic biostratigraphy and vertebrate paleontology is the difficulty of correlating strata and faunas across the Circum-Arctic region. These difficulties appear to result partly from insufficient study, partly from the difficulty and expense of doing appropriate field work, partly from insufficient international collaboration, and partly from apparent examples of provincialism and endemism of faunas. We propose a project to coordinate and stimulate research into Lower and Middle Palaeozoic vertebrates from remote northern areas; to study their taxonomy, succession and the most important stratigraphic levels of biological changes and events in vertebrate evolution; to reconstruct their evolutionary relationships; to improve knowledge of the stratigraphic (especially in stratotype sections) and geographical ranges of vertebrates using also data on conodonts, chitinozoans, spores, and other associated fossils; to elaborate regional vertebrate biozonal schemes; and to correlate sedimentary rocks within and among currently northernmost parts of the Laurentian, Baltican, Barentsian and Siberian paleocontinents; and to contribute to compilation of paleogeographic maps for the Silurian and Devonian.

CIMP SUBCOMMISSION ON CHITINOZOA (submitted by **Stuart Sutherland**).

Work continues on various aspects of Silurian Chitinozoa. Of direct interest to those involved with Silurian stratigraphy is the publication a Silurian Global Chitinozoan Biozonation by Verniers et al. in the Geological Magazine, London 1995, 132 (6), p. 651 - 666. In total 17 biozones are defined and as they are each recognised on at least 2 palaeoplates, they are regarded as being useful on a global scale. The scheme is particularly useful, especially when one considers that chitinozoans are often present in sections where conodonts or graptolites are absent.

Chitinozoan Newsletter No.15 has just been published and includes details on current research, text books, computer data bases, future meetings and news items from correspondents in Algeria, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Czech Republic, Estonia, France, Germany, Hungary, Poland, Saudi Arabia, Scandinavia, United Kingdom and the USA.

If you wish to receive future issues of the chitinozoan newsletter please contact;
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Email: Jacques Verniers@rug.ac.be

WENLOCK, LOWER LUDLOW AND POSSIBLY, PRIDOLI GRAPTOLITES FROM THE YULIN REGION, SOUTHERN CHINA : A. Lenz, Chen Xu and Ni Yu-nan:
The following is the abstract of a paper just recently submitted.
Late Wenlock and Ludlow transition graptolites are better developed and more diverse in the Yulin region of Guangxi Province, South China, than elsewhere in China. The upper Homerian (Upper Wenlock) graptolites, while moderately diverse, are not amenable to a zonal subdivision because key species such as *Colonograptus praedeubeli, C. deubeli* and *C. ludensis* are found to completely overlap in their occurrences. Ludlow graptolites, all probably assignable to the lowest Ludlow *nilssoni-progenitor* Biozone, include *Lobograptus progenitor, Colonograptus colonus, C. gerhardi,* and *Bohemograptus bohemicus* (sensu lato). The single occurrence of *Monograptus* cf. *rectiformis* Príbyl is the only species suggestive of Pridoli-age strata. The overall assemblages are composed predominately of cosmopolitan species, and provide little biogeographic information. In particular, they provide only minimal support for the suggestion that the Yunkai Block in which the Yulin region is situated, was originally part of Gondwanaland.

CONODONT BIOSTRATIGRAPHY OF THE OCKERKALK: Enrico Serpagli (Italy)
The Ockerkalk is an unusual Silurian limestone known in Thuringia, Sardinia and reported also in Spain, Carnic Alps and western Czech Republic. Its poor fossil content has, until now, prevented a precise age assignment to this limestone.

The Ockerkalk exposed in southeastern Sardinia (Silius area, Gerrei) has, surprisingly, yielded a rich conodont fauna which is reported for the first time from this facies (Barca, et al. 1995). The twenty-two conodont species were recovered, indicate a Ludlow-Pridoli age for this limestone. Condont indexes of the following biozones or subbiozones are reported: *A. ploeckensis, P. siluricus, Pe. latialata, Oz. snajdri, Oz. crispa, Oz. r. esteinhornensis, O. elegans detortus.* The occurrence of *Pe. latialata* between *P. siluricus* and *Oz. snajdri*, without any co-occurrence, suggests a re-evaluation of its stratigraphic importance is needed.

A similar chronological assignment had been deduced from the area by Jaeger (1977) on the basis of underlying and overlying graptolite-bearing shales. Three conodont biozones (*latialata, snajdri,* and *crispa*) are reported for the first time in Sardinia, and the occurrence of *Pelekysgnathus index* is new in Europe.

3RD BALTIC STRATIGRAPHIC CONFERENCE: D. Kaljo (Estonia):

The 3rd Baltic Stratigraphic Conference: will be held in Tallinn Estonia October 8-12, 1996, including an early Paleozoic excursion (two days). There are nearly 100 registrants from outside Estonia. The second circular is available from D. Kajo (address available in Silurian Times No. 3).

CURRENT RESEARCH OF SILURIAN WORKERS

Richard J. Aldridge (U.K.) Outline of research: I report another year of concentration on conodont palaeobiology. However, the Wenlock paper in the Silurian Episodes and Events series appeared this year, and work is in progress with Lennart Jeppsson on the Ludlow sequel. I have also completed some work with Viive Viira on Ludlow/Pridoli conodont biostratigraphy of Estonia.

Anna A.I. Antoshkina (Russia) Outline of research: Lithology and facies of the Silurian carbonate deposite of the Timan-Urals region

Esther Asselin, Aicha Achab, Azzeddine Soufiane (Canada) Outline of research: Chitinozoa, Ordovician, Silurian, Devonian, Biostratigraphy, Systematics, Paleogeography.
We have no publications on Silurian during 1994-1995 but we are working on Silurian Chitinozoa from the Arisaig Group (Nova Scotia) (Project with Dr. Aicha Achab , Azzeddine Soufiane and Paul Stotther) and on a contribution to a Silurian correlation chart in Canada (Project supervised by Brian Norford).

Ricardo A. Astini (Argentina) is continuing his studies on the sedimentology, depositional environments, sequence stratigraphy and basin analysis on Silurian units of the Precordillera Basin.

Christopher Barnes (Canada) Chris Barnes continues his interest in Early Silurian conodonts, but immediate attention this year is focused on Ordovician faunas. A paper is in preparation on the development of the Lower Paleozoic strontium isotope ratio curve with over 70 values so far on the Late Cambrian to Late Silurian interval using conodonts for analysis (with Jan Veizer, Univ. of Ottawa and Ruhr Univ.). In a parallel study, models of Lower Paleozoic paleogeography and paleoceanography are being tested using neodymium isotopes from conodonts; Cindy Wright has just completed her M.Sc. on this project which was also assisted by Stein Jacobsen (Harvard Univ.).

James E. Barrick (U.S.A.) Outline of research: I have been integrating conodont biostratigraphy and depositional sequences in the southern United States (Arkansas, Oklahoma, Texas, and New Mexico), attempting to resolve local stratigraphic problems and to develop a regional sea-level curve for the Silurian. I am also working with Mark Kleffner (Ohio State) in improving the graphic correlation composite standard for the Silurian.

Richard A. Batchelor (U.K.) Outline of research: Richard Batchelor is working on the geochemistry of Lower Palaeozoic bentonites and its application to classification of volcanic sources and correlation in northern Europe. He is currently concentrating on bentonite suites in the Telychian as potential high-resolution correlation tools.

John H. Beck (U.S.A.) My PhD dissertation, supervised by P.K. Strother and due for completion in August 1996, is an integrated palynological and sedimentological study of the entire Slurian Arisaig Group of Nova Scotia. Emphasis is on nonmarine and marine organic microfossil systematics, relationships between palynoflora distribution patterns and sedimentology-based depositional models, and trophic interrelation between invertebrate communities and dispersed organic matter. Additional and future research in this field will focus on the paleobotanical evolution of Silurian units in the central Appalachians.

Juan Luis Benedetto (Argentina) is continuing his studies of Silurian brachiopods from the Precordillera and Northwestern basins of Argentina, their taxonomy and biostratigraphy. Other projects include paleogeographic reconstruction of Gondwana during the Silurian and biogeographical relationships between Malvinokaffric brachiopod faunas.

Claes F. Bergman (Sweden) Outline of research: Scolecodonts, all aspects, Lower Paleozoic.

Merete Bjerreskov (Denmark) Outline of research: Silurian graptolites, stratigraphy, taxonomy, taphonomy.

Alain R.M. Blieck (France) Outline of research: Palaeozoic lower vertebrates, especially Pteraspidomorphi (Ordovician taxa and Heterostraci -Silurian-Devonian)

Henning Blom (Sweden) Outline of research:. I am a PhD student working with Middle Palaeozoic microvertebrates, with special reference to the upper Silurian of Greenland.

Arthur Boucot (USA) Projects: 1. Cooperative project with Chen Xu and Chris Scotese on climatically sensitive sediments of the Phanerozoic as tools for improving paleogeography; 2. Pentameroids and Devonian terebratuloids for Treatise brachiopod volume revision; 3. Late Silurian fauna from northeastern Mexico, of European Province (not North American!) type--near Cuidad Victoria, Tamaulipas--overlain by typical North American Permo-Penn. faunas; 4. Working on Late Silurian and Devonian brachiopod faunas from northern Vietnam, and from southern Thailand, with local colleagues; 5. Stony Hollow, late Eifelian brachiopods, with Bill Koch and Bob Blodgett, work collecting by Ver Straeten, from eastern New York; 6. Revision with Rong Jia-yu of virgianid brachiopods.

Margaret M. Bradshaw (New Zealand) Has recently begun a 3 year comprehensive FRST contract on the Early Devonian rocks of the Baton Formation, Northwest Nelson, and their relationship to the Middle to Upper Silurian Ellis Quartzite. It is anticipated that this programme will eventually merge into a future project on the poorly fossiliferous Silurian rocks of the Hailes Knob area of Northwest Nelson.

Antanas Brazauskas (Lithuania) Outline of research: Silurian biostratigraphy and conodonts in the Baltic Basin.

Carlton E. Brett (U.S.A.) I am continuing research with William Goodman, Mark Kleffner and others, on sequence/ cycle stratigraphy and bioevents in the Silurian of Ontario, New York, Pennsylvania region. Frank Ettensohn and I are also documenting what we believe to be a third, Silurian tectophase of the Taconic Orogeny that is recorded in the Appalachian foreland as the Tuscarora-Medina clastic wedge and the subsidence and migration of a marine basin (the Power Head-Cabot Head basin) in Ontario, southwestern New York and Ohio. I am also working with Wendy Taylor (Paleontological Research Institute, Ithaca) on evolutionary paleoecology of pelmatozoan thicket communities in the Caradocian to Early Devonian interval. We are attempting to determine whether or not patterns of stability and punctuated restructuring documented for level-bottom brachiopod-dominated faunas (see Brett and Baird 1995) also apply and are synchronous in pelmatozoan-bryozoan thicket communities. In particular, we are testing for the patterns of change in diversity, tiering, and guild structure in pelmatozoan associations across times of major faunal crisis, including the Ashgill extinctions. I am also increasingly involved in preparations for the James Hall Symposium (2nd Internatinal Symposium on the Silurian System). I look forward to seeing many of you at the meeting and on our field excursions into the classic Appalachian Basin Silurian strata.

Frank R. Brunton (Canada) Projects: Paleoecologic, temporal and spatial analysis of Silurian reef ecosystems. Evolution of Phanerozoic reef ecosystems, with extensive paleoecologic/ systematics knowledge of Ordovician-Devonian, Carboniferous, and Jurassic reef-building invertebrates. Regional stratigraphy, lithofacies analysis/ petrology, and sequence stratigraphy and carbonate platform development, for both Paleozoic and Cenozoic cool- and warm-water carbonate and mixed carbonate/siliciclastic successions.

Edsel D. Brussa (Argentina) is working on graptolite faunas of the Ordovician-Silurian boundary from the Argentine Precordillera.

Andrew J. Butler (U.K.) Outline of research: Subsidence analysis of the Palaeozoic sequences on the North American continent and basins along the Caledonian Appalachian Orogen. Investigation of the interior cratonic basins of North America (Michigan, Illinois, Williston and Hudson Bay) and their relationships, if any, to each other and to the cratonic margins. Constraints on Palaeozoic sea levels from subsidence work.

Robin Cantrill (Australia) reads as much as possible on Silurian research, especially Upper Silurian conodonts.

Richard R. Cave (U.K.) Outline of research: Welsh Lower Paleozoic Basin- stratigraphy and sedimentation. Currently the main research is with D.K. Loydell on the Llandovery-Wenlock boundary, including that of the stratotype.

Chen Xu, (China) Projects: 1. Telychian of the Yangtze region-a final report of the Sino-British joint project on the Telychian (Chinese version with Rong Jia-yu, etc.); 2. Latest substage of the Ordovician and its candidate from Yichang, China (with Rong Jia-yu, David Harper, etc.); 3. Silurian graptolites from Guangxi (with a. Lenz and Ni Yu-nan); 4. Silurian graptolites from Tarim (with Ni Yu-nan, etc.); 5. Geological History of the Nanjing Hills (English version, co-edited with Wang Hai-feng and C.H. Holland).

Gina Christodoulou (Sweden) Outline of research: Ostracodes (Leperditicopoda) from Gotland- taxonomy, morphology, ontogeny, ecology.

Euan N.K. Clarkson (U.K.) Outline of research: Silurian geology and paleontology of the Midland Valley of Scotland and Ireland, as part of the south-eastern margin of the Laurentian continent (mainly with David Harper and Cecilia Taylor.

Robin L.R.M. Cocks (U.K.) The plectambonitoid and strophomenoid (including stropheodontid) contributions to the Treatise on Invertebrate Paleontology were sent to Kansas in April. Since then, work has commenced on an Ashgill age fauna from the Taimyr Peninsula, Siberia (with Tania Modzalevskaya), and on a review of the Silurian of the Avalonian palecontinent (with Stuart McKerrow) for the James Hall Symposium in 1996.

Paul Copper (Canada) Outline of research: Reefs, brachiopods, communities, evolution.

Tim de Freitas (Canada) continues his work on the Lower Paleozoic geology of the Canadian Arctic Islands. In collaboration with several of his colleagues, he has just completed the 1:250K scale mapping of Bathurst Island and neighbouring smaller islands. The work forms part of a national park feasibility study by Parks Canada. Tim's most recent contribution to the geology of the Arctic Islands has been GSC Bull (in press) on the Geology of northern Devon Island. This area contains exposures of Cambrian to Tertiary deposits, including numerous Ordovicin and Silurian reefs, thick oolitic shelf-margin deposits, and graptolitic mudrock. Tim's presernt effort is a GSC report on the subsurface geology of the western Arctic Islands, and the surface bedrock geology of central and northern Ellesmere Island. Field work for the latter will be completed in 1996.

Keith Dewing (Canada) Outline of research: I am currently working on a joint government (INRS) -industry (Cominco) project using graptolites for mapping in the Canadian Arctic Islands, and using graptolite periderm as an indicator of thermal maturation around sediment-hosted lead-zinc deposits.

Rick Diecchio (U.S.A.) Outline of research: Physical stratigraphy of Ordovician-Silurian boundary strata in Central Appalachians.

Stephen K. Donovan (Jamaica) and co-workers are studying the systematics and taphonomy of Silurian crinoids, particularly in the Upper Llandovery Kibride Formation of western Ireland, the Ludlow Moydart Formation of Nova Scotia, Canada, and the Wenlock Thorton Reef Complex of Illinois, U.S.A. Two papers are in press on crinoids from the Moydart (co-authores by Ron K. Pickerill), discussing the taphonomy of columns preserved in life position (Palaios) and the systematics of a moderately well-preserved camerate (Atlantic Geology). A review of the Silurian crinoids of the British Isles is in preparation.

Steven G. Driese (U.S.A.) Outline of research: I am presently engaged in collaborative research with my stable isotope geochemistry colleague, Dr. Claudia I. Mora, on the role of Silurian-Devonian land plant evolution and diversification on paleosol morphology and chemistry. This summer we examined paleosols developed in the most proximal facies of the Bloomsburg Formation (Ludlovian-Pridolian) of east-central Pennsylvania and southeastern New York. The paleosols are developed in thin, 1-3 m thick fining-upward sequences that formed along a muddy coastal margin. Some of the deposits intertongue with Shawangunk Conglomerate deposits of possible braidplain origin. Although there is abundant macro- and mesoscopic evidence for bioturbation in the paleosols, macroscale evidence for land plants contributing to pedogenesis is

lacking. Fine (0.5-3 mm diameter), filamentous, branching tubules, lined by micrite and filled with conglomerate deposits of possible braidplain origin. Although there is abundant macro- and mesoscopic evidence for bioturbation in the paleosols, macroscale evidence for land plants contributing to pedogenesis is lacking. Fine (0.5-3 mm diameter), filamentous, branching tubules, lined by micrite and filled with calcite spar cement, occur in thin sections of 1-3 cm diameter calcrete nodules. The tubules are suggestive of rhizomous mats, and have depleted carbon isotope values relative to marine calcite. Research will continue next summer with studies on Lower Devonian (Emsian) paleosols in the Battery Point Sandstone of Quebec, in which macroscopic fine root traces are more common in Silurian deposits.

Pavel Dufka (Czech Republic) Outline of research: Silurian-Devonian chitinozoans and palynofacies; evolution of early land plants; Silurian sporomorphs.

David K. Elliott (U.S.A.) Outline of research: Biostratigraphy of the Silurian and Devonian of the Canadian Arctic and western U.S. Paleoecology, taxonomy, and biostratigraphy of vertebrates through the Silurian and Devonian.

Annalisa Ferretti (Italy) Continues her work on Silurian paleoenvironments in the Mediterranean area. She is currently investigating (with Enrico Serpagli) a peculiar graptolite facies in Sardinia. A global study of the cephalopod limestone from the Austraian Carnic Alps has recently started.

Barry G. Fordham (Australia) Outline: Barry Fordham is working on Silurian--Lower Carboniferous conodont biostratigraphy, Yarrol Province, central Queensland, eastern Australia.

Fu Lipu (China) has completed the description of Arenigian graptolites from Ziyang, South Qinling, and Caradocian brachiopods of Middle Qinling. He is also working on the Ordovician in Ordoc Basin, and cooperating with Rong Jia-yu in a study of Ashgillian brachiopods; and on Ordovician and Silurian paleobiogeography in China.

Geng Liang-yu (China) Outline of research: Ordovician and Silurian chitinozoans.

Mauricio Gnoli (Italy) Outline of research: 1. Taxonomic revision of nautiloid cephalopods of the old classical Silurian collections: Central Bohemia, Carnic Alps, Sardinia; 2. Taxonomy, functional morphology and taphonomy of Sardinian Ordovician , Silurian and Lower Devonian nautiloid cephalopods.

Wolfgang Hansch (Germany) Outline of research: Different aspects of Silurian ostracodes and Silurian stratigraphy, especially of central Europe. At present he has to share time with a Triassic project.

Mark T.Harris (U.S.A.) Mark works on (a) an integrated sedimentologic and paleontologic study of Upper Ordovician and Lower Silurian carbonate sequences of the Great Basin with Peter Sheehan, and (b) the sedimentology and stratigraphy of the Lower Silurian (Llandovery).

Rachel J Heath (U.K.) I am working on Early Silurian palaeoceanography, faunal events and sea-levels for my doctoral thesis. I am studying biotic recovery in the Llandovery following the end Ordovician extinction. To investigate palaeoceanography, I am constucting carbon and oxygen stable isotope curves for the Llandovery by analysing brachiopod material collected from Estonia. I also collected material from Anticosti, Canada, during the summer.

Charles H. Holland (Ireland) Outline of research: Silurian cephalopods.

Andrew J. Jeram (U.K.) Outline f research: Paleozoic terrestrial arthropods, their evolution and ecology, with particular emphasis on fossil scorpions.

Jin Chuntai (China) Outline of research: Silurian of the Yangtse Platform, and Tabulata.

Markes E. Johnson (U.S.A.) Outline of research: Under a grant funded by the National Geographic Society and the Russian Foundation for Fundamental Research, 1995 saw the 2nd year of cooperation with Dr. Yuri Tesakov (Novosibirsk) and his colleagues on a comparison of Silurian stratigraphy and paleogeography between Siberia and North America. Outstanding exposures of Lower Silurian strata were visited on the Gorbiachin and Maymecha rivers in arctic Siberia in July 1995. Our initial report, entitled "Comparison of Lower Silurian shores and shelves in North America and Siberia" has passed through the review process and is being considered as a contribution to a memoir of the Geological Society of America.The Russian-American project nicely complements research on Silurian paleogeography conducted with Dr. Rong Jia-yu (Nanjing) in China during the summer of 1994. Our report on "A stepped karst unconformity as an early Silurian rocky shoreline in Guizhou Province (South China)" will be published in 1996. I am particularly interested in using Silurian shorelines, especially rocky shorelines, as "meter sticks" to measure relative sea-level changes in a test of the global Silurian sea-level curve. A summary of all known Silurian rocky shorelines is in preparation for the workshop on "Silurian cycles" at the James Hall Meeting in 1996.

Dimitri Kaljo (Estonia) with colleagues T. Kiipli and T. Martma, prepared a paper on the first results on carbon isotope studies in Wenlock and Ludlow. The isotope shifts appear to mark some bioevent levels and can be used for correlation. The work is continuing to embrace the entire Silurian. A joint project with the Liverpool team (P. Brenchley, J, Marshall) was initiated.

Stephen Kershaw (U.K.) Outline of research: Reef paleoecology and sedimentology, with specialization on fossil calcified sponges (stromatoporoid and chaetetid types). Papers in preparation include a review on stromatoporoid paleobiology; and on competition amongst reef organisms (with Fagerstrom, West and Cossey).

Mark A. Kleffner (U.S.A) Mark Kleffner continues to work on Silurian conodonts in the midwestern basins and arches region of North America. Presently most of his research time in that area is concerned with completing a study of strata associated with the panderodont conodont animal in Wisconsin (with Rod Norby) and relating conodont distribution to sequence stratigraphy of the Appalachian Basin. He also continues to work on Lower Silurian conodonts of Nevada (with Mike Murphy). Although a recent major revision of a conodont- and graptolite-based Silurian chronostratigraphy is now published in SEPM Special Publication No. 53, he is refining and revising it again, particularly the early Wenlock portion, based on a North American southern midcontinent composite originally compiled by Jim Barrick, that is being recorrelated and revised as part of a joint study with Jim. Since they have the goal of correlating conodont and graptolite zones as precisely as possible in this joint study, Mark is interested in any information (or reprints) on the official definition (and/or recognition) of late Llandovery, Wenlock, Ludlow, and Pridoli graptolite zones.

Joanne Klussendorf (U.S.A.) reports that she and Donald Mikulic recently completed a salvage of the Silurian soft-bodied *Lagerstätte* from an operating quarry at Waukesha, Wisconsin, sponsored by the U.S. National Science Foundation. In June, they discovered a new locality for soft-bodied fossils in Wisconsin and recovered many, well-preserved specimens. As part of this project, they are working with Rodney Norby (Illinois State Geological Survey) and Mark Kleffner (Ohio State University-Lima) on conodonts and with Bill Berry (University of California-Berkeley) on the graptolites to refine the biostratigraphy in eastern Wisconsin and northern Illinoios in order to work out the sequence stratigraphy of the region and to correlate the *Lagerstätte* and associate depositional features with global events. In addition to this work, she continues her studies of Silurian reef paleoecology and sedimentology, trace fossils, and karst.

Tatyana N. Koren (Russia) Outline of research: 1. the continuation of studies on taxonomy and evolution of the early Llandovery diplograptids of the Uralian -Kazakstan jointly with B. Rickards and of the same age monograptidas from Bornholm and southern Urals jointly with M. Bjerreskov (in press and in preparation); 2. the completing of the manuscript on the Ordovician and Silurian graptolites of the Novaya Zemlya in co-authorship with R. Sobolevskaya with the description of about 130 species (in press); 3.the comparative studies of the late Wenlock-early Ludlow plectograptines jointly with A. Kozlowska-Dawidziuk and A. Lenz (a project); 4. a description of the diplograptids from the Ordovician-Silurian boundary beds in the Kurama Range, Uzbekistan (in preparation); 5. the studies on the biodiversity dynamics of the early Llandovery graptolites within the IGCP project 335; 6. an integration of the conodont and graptolite biozonations within Ludlow and Pridoli in the Alay Range, Central Asia jointly with O.H. Walliser (in preparation).

Anna Kozlowska-Dawidziuk (Poland) Projects: I am continuing research on phylogeny and taxonomy of Silurian retiolitids of the East European Platform and of the Baltic erratic boulders. I am also currently working on Wenlock/Ludlow boundary graptolites, especially plectograptids of Polish Part of EEP.

Jiri Kriz (Czech Republic) Outline of research: Silurian paleogeography, biostratigraphy, correlation, Prague Basin development, Lower Paleozoic Bivalvia. Projects: 1. During first months of 1996 the English version of the Barrandian will be published by the Czech Geological Survey, edited by I.Chlupac, where the Barrandian and especially the Prague Basin is descibed in detail by V.Havlicek (Ordovician), J.Kriz (Silurian), I.Chlupac (Devonian), J.Kukal (sediments of the basin), P.Storch (volcanics of the basin). 2. In 1995 work on the proposed subdivisions of the Pridoli continued (P.Dufka and J.Kriz). Also the work concerning volcanic archipelago in the Silrian of the Prague Basin (Wenlock - Pridoli) is in progress (J.Kriz and P.Dufka). 3. Together with Nigel Hughes from Cincinnati Museum of Natural History I studied in October 1995 the Barrande test pits at Lodenice in connection with the study of the Aulacopleura konincki (Trilobita) ontogeny. 4. Monographic studies: In press is the monograph of J.Kriz on the Silurian Bivalvia of Bohemian type from Montagne Noire and Massif Mouthoumet, France (Paleontographica, Stuttgart) which will be published early in 1996 and the paper on *Maida* gen.n. - the oldest known nektoplanktic bivalve from the Pridoli (Silurian) of Europe (GEOBIOS, Lyon). I hope that by the end of this year or early in 1996 the monograph on the Bivalvia dominated communities of Bohemian type from the Silurian and Lower Devonian carbonate facies will be published by the Cambridge University Press as the part of A.Boucot's and J.Lawson's final report of the Ecostratigraphy Project.

Sven Laufeld (Sweden) Outline of research: Natural hazards, high-speed processes and their environmental impact; volcanic eruptions, earthquakes, tsunamis, windstorms.

James D. Lawson (U.K.) Projects: Silurian-Lower Devonian paleocommunities, the final report of Project Ecostratirgaphy, edited by A.J. Boucot and J.D. Lawson, will be published by Cambridge University Press. A paper on stropheodontid brachiopods of the Ludlow of the Welsh borders by Bassett, Hanna and Lawson, has been submitted to the publisher.**A. Le Hérissé (France)** Le Hérissé is studying Paleozoic acritarchs and allied forms (prasinophytes, coenobial algae, mazuelloids),

A. Le Hérissé (France) Le Hérissé is studying Paleozoic acritarchs and allied forms (prasinophytes, coenobial algae, mazuelloids), including their systematic, their diversity, their use in biostratigraphy, paleoecology and paleogeography. Currently working on assemblages from Gotland, Sweden, Algeria, Libya, Tunisia, Saudi Arabia, Turkey, Bolivia and Argentina.

Alfred C. Lenz (Canada) Projects include: 1. Continued study of Homerian and earliest Ludlow monograptid and retiolitid graptolites of Arctic Canada (flattened as well as isolated specimens); 2. Collaborative projects on upper Wenlock and lower Ludlow graptolites from Spain and Portugal (with Gutiérrez-Marco, Spain; Robardet, France and Piçarra, Portugal); and southern China (with Chen and Ni, China); 3. Collaborative projects are planned on Wenlock-Ludlow retiolitid graptolites from Kazakhstan with Koren, Russia, and Kozlowska-Dawidziuk, Poland; and on Wenlock graptolites from the Prague area, Czech Republic (with Kriz, Czech Rep., and Kozlowska-Dawidziuk, Poland); 4. Continued collaborative graptolite studies with Gutiérrez-Marco and Piçarra in Spain and Portugal are tentatively planned for the spring of 1996; 5. A long-range plan to study of Upper Silurian-Lower Devonian graptolites of the Arctic Islands is expected to begin in 1996.

Pierre J. Lespérance (Canada) Outline of research: Stratigraphy (bio-, litho-) and paleontology of Upper Ordovician-Middle Devonian trilobites and brachiopods, predominantly from the Quebec Appalachians. Current fields of investigation are lithostratigraphy and biostratigraphy of the Lower Devonian of Gaspé; systematics of its enclosed spiriferoids and the latest Silurian ones. Upper Ordovician trilobites of the Percé area, with revision of a few early Silurian forms.

Steven T. LoDuca (U.S.A.) Outline of research: I am continuing working on the taphonomy, systematics, and evolution, including evolutionary and paleodiversity trends, of the Lower Paleozoic thallophytic (noncalcified) algae. I am also continuing work on Silurian *Konservat-Lagerstätten*, especially those that contain abundant thallophytic algae ("thallophitic-alga-dominated biotas"), and the Silurian stratigraphy of the Appalachian and Michgan basins.

David K. Loydell (U.K) Projects: Revision of the graptolite genus *Retiolites*. Telychian biostratigraphy of the Southern Uplands, Scotland

Robert F. Lundin (U.S.A.) Outline of research: Paleozoic Ostracoda: biostratigraphy and paleogeography. Nonpalaeocope ostracodes of Gotland and methods of shape analysis of smooth ostracodes.

Peep Männik (Estonia) Outline of research: Evolution, ecology and taxonomy of Llandovery and Wenlock conodonts; high-resolution stratigraphy and reflection of oceanic changes in conodont faunas.

Tiiu Märss (Estonia) Outline of research: Studies on the Silurian vertebrate paleontology and biostratigraphy. Present interests focus on the vertebrate microremains from the Canadian Arctic and Britain.

Monika Masiak (Poland) I am working on all aspects of Silurian palynomorphs from Poland, especially acritarchs. I am also studying graptolites from the same strata and areas.

Alexander McCracken (Canada) New research will be on conodonts of the Devonian Period, but there is still unfinished work on Ordovician-Silurian conodonts from the Arctic Islands (especially Cornwallis Island), and Lake Timiskaming area of Ontario.

W. Stuart McKerrow (U.K.) Outline of research: Collaborating with Torsvik and Scotese on world maps for Early Paleozoic and Late Precambrian. Collaborating with Tucker on Early Paleozoic time scale.

Donald G. Mikulic (U.S.A.) has been working on the Waukesha *Lagerstätte* with Joanne Klussendorf. He also contnues his work on the Silurian sequence stratigraphy of Illinois, Wisconsin and surrounding areas. In addition, he is studying the systematics, taphonomy, paleoecology and extinction of Silurian trilobite biotas from the central U.S.

Giles C. G. Miller (U.K) Outline of research: At present I am studying conodont and ichthyolith co-occurrences from Silurian sections in the Welsh Borderland and Wales in a joint project with Tiiu Märss (Estonian Academy of Sciences, Tallinn). In June (1995) we sampled 20 localities (mainly Wenlock-lowermost Pridoli of the Welsh Borderland) and in September/October I travelled to Estonia visiting the Silurian exposures on the island of Saaremaa and the Estonian Academy of Sciences, Tallinn.

Petras Musteikis (Lithuania) Outline of research: Silurian brachiopods, their taxonomy and communities; Silurian biostratigraphy, paleogeography and basin analysis.

Heldur Nestor (Estonia) recently completed a paper "Evolutionary history of single-layered laminate stromatoporoids Clathrodictyida" presented at the VI International Symposium on Fossil Cnidaria and Porifera, Madrid. At present working on the stratigraphy chapter of a monograph "Geology and Mineral resources of Estonia".

Viiu Nestor (Estonia) Research: Viiu Nestor is working on Silurian chitinozoans and biostratigraphy of Baltoscandia.

Paula J.Noble (U.S.A) Outline of research: Paleozoic radiolarian biostratigraphy with a recent focus on developing the biostratigraphic potential for Late Ordovician - Silurian

Brian S. Norford (Canada) Outline of research: Silurian biostratigraphy, trilobite and brachiopod taxonomy. Correlation of Silurian rocks in Canada.

Godfrey S. Nowlan (Canada) Outline of research: 1. Lower Paleozoic stratigraphy, biostratigraphy and petroleum geology of the Western Canada Basin; 2. Ordovician - Silurian conodont biostratigraphy of the Williston Basin; 3. Ordovician biostratigraphy of the Anticosti Basin; 4. Lower Paleozoic conodonts of the Appalachian orogen in Canada.

William A. Oliver, Jr. (U.S.A.) Outline of research: Upper Silurian through Middle Devonian rugose corals. Current project that is pertinent: Pridolian-Lochkovian corals of the Appalachian Basin.

D. Jeffrey Over (U.S.A.) Studies: Silurian conodonts and sequence stratigraphy- focus on Appalachian Basin.

Matthew A. Parkes (Ireland) has completed curating the entire fossil collection of the Geological Survey of Ireland. This is a 19th century collection from primary mapping of Ireland. It has been unavailable for most of this century. Extensive shelly and graptolitic material from almost all of the Silurian inliers of Ireland exists, and is now an accessible resource. You are encouraged to make full use of the collections for research purposes, where applicable. As a whole, it is as important as Griffith's Collections described in M'Coy's Synopsis of the Silurian Fossils of Ireland (1846). There are many topotypes of that better known collection held in the National Museum of Ireland.

John S. Peel (Sweden) Outline of research: Working on Lower Paleozoic gastropods and monoplacophorans from the Baltic region, Greenland and North America with doctoral candidates Jan-Ove Ebbestad and Alexander Gubanov.

José Manuel Piçarra d'Almeida (Portugal) Outline of research: Stratigraphy and paleogeography of the Cambrian to Devonian from south Portugal (Ossa Morena zone), and Silurian graptolite biostratigraphy.

Gail Radcliffe (U.K.) Outline of research: I am now a second year PhD student. The title of my PhD is 'Biotic recovery after mass extinction'. I am concentrating on recovery of conodonts after the end Ordovician mass extinction event. This summer I visited the Geological survey of Canada at Calgary and Ottawa to study collections of Silurian conodonts. I also collected conodont samples on Anticosti Island.

J. Keith Rigby (U.S.A.) is currently investigating Paleozoic sponges from throughout the world and has just been loaned the first Silurian sponges known from Spain in the Iberian Peninsula. The description and analysis of these hexactinellid sponges is currently underway. A major fauna of Silurian sponges from the Mackenzie Mountains region of northwestern Canada is also under investigation as part of a review of all Silurian sponges from Canada.

Susan Rigby (U.K.) Outline of research: Graptolite ecology and the evolution of plankton.

Rong Jia-yu (China) Outline of research: 1. Ordovician and Silurian brachiopod community ecology and biogeography of China; 2. Biotic recovery from three mass extinctions in the Paleozoic of South China; 3. Silurian paleogeography of China.

Madis Rubel (Estonia) Outline of research: Clitambonitidine brachiopods (morphology), palaeontological timescales (Baltic Silurian ostracodes, thelododonts and Ordovician ostracodes and chitinozoans).

Claudia Rubinstein (Argentina) Outline of research: C. Rubinstein works on Ordovician, Silurian and Devonian palynomorphs of Argentina, specially acritarchs and spores. She also works on palynostratigraphy of the Devonian and Devonian-Carboniferous boundary of Chile. She is currently working on assemblages from the Siluro-Devonian boundary of Libya, Brazil and Argentina with P. Steemans (Belgium) and A. Le Hérissé (France).

Teresa M. Sanchez (Argentina) is working on taxonomy of bivalve faunas of the Precordillera and Northwestern basins, including paleoecological studies. Another important objective is the analysis of the biogeographical relationships of the Malvinokraffic fauna.

Olof Sandström (Sweden) Outline of research: Silurian reefal environments, sedimentology,paleoecology, dynamic modelling and processes.

Nikolay Valerianovich Sennikov (Russia) Outline of research: Graptolites, palaeogeography, Siberian platform, Gorny Altay.

Enrico Serpagli (Italy) Outline of research: 1. Ockerkalk biostratigraphy from SE Sardinia; 2. Biosedimentology and age of a peculiar graptolite facies from Wenlock-Pridoli of SW Sardinia (with A. Ferretti).

Dalip K. Sethi (Sweden) works on Silurian (particularly Llandovery) palaeocope ostracodes of Gotland and Scania.

Andrew J. Simpson (Australia) Outline of research: A Phd thesis entitled "Silurian conodont studies in eastern Australia was completed during 1995. The study focussed on conodont faunas from two areas of the Tasman Fold Belt; the Graveyard Creek Group in northern Queensland and the Limestone Creek region in eastern Victoria. The results from Victoria showed that limestones previously accorded a Late Silurian age span most of Silurian time, thus requiring a reassessment of tectonic models for the region. The results from Queensland revise the age of some units and demonstrate the presence of some reworked faunas. Results were presented at the AUSCOS 1 conference at Macquarie University and discussed during the associated field trip to north Queensland in July, 1995. Ongoing research includes more detailed conodont sampling of sections through the Jack Formation and analysis of faunas from the allochthonous Thatch Creek limestone in north Queensland. A paper documenting a new acanthodian microvertebrate fauna from the Ludlow (ploeckensis zone) of the Jack Formation with Carole Burrow (Zoology, University of Queensland).

Derek J. Siveter (U.K.) Work continues on various aspects of Silurian trilobites from Europe and N America; also, together with R. Corfield and S. McKerrrow (Oxford) and L. Jeppsson (Lund), Silurian isotope work in UK and Gotland.

Kenneth L. Soehn (Canada) Outline of Research: New heterostracans from the Wenlockian (Silurian) of the Selwyn Basin, Mackenzie Mountains, Northwest Territories, Canada.

Constance M Soja (U.S.A.) Outline of research: I am continuing my research on Silurian subtidal stromatolite-sphinctozoan reefs and associated deposits in the Alexander Terrane, Alaska. This year I began joint research with Anna Antoshkina at the Institute of Geology in Syktyvkar, Russia, on Silurian stromatolites from the northern Urals that are remarkably similar to those in Alaska. We are continuing to explore the paleobiogeographic implications of these deposits.

Petr Storch (Czech Republic) Outline of research: 1. High resolution graptolite biostratigraphy and correlation of selected Lower Silurian sequences of Peri-Gondwanan Europe; 2. Biotic crises and post-crises recoveries recorded by Silurian planktonic graptolite faunas; 3. Llandovery graptolites and biostratigraphy of the western Iberian Cordillera, Spain (with J.C. Gutiérrez-Marco).

Paul K. Strother (U.S.A.) Projects: I am primarily engaged in the study of Silurian (and, to a limited extent, Ordovician and Devonian) cryptospores as evidence for the rise of the terrestrial flora. John Beck and I are finishing work on the Arisaig section in Nova Scotia, Canada (which has shown remarkable similarity with the Welsh Basin , UK) and will be concentrating on the Silurian palynology of the central Appalachian Basin over the next several years. My interests are in the origin and early evolution of the land plants including the systematics of cryptospores, the study of microscopic plant fragments (nematoclasts and cuticles), and morphology and taxonomy of the Nematophytales, an early thalloid plant group. This involves a combination of field work, alpha taxonomy, and original applications of microscopic image analysis to the study of morphology.

Desmond L. Strusz (Australia) Outline of research: I am preparing a revised version of the 1989 Australian Silurian timescale (BMR Record 1989/33), for issue as an AGSO Record early in 1996. A paper describing a new large Wenlock trimerellid (with Wright, Pickett, Percival and Byrnes) should be finished about the same time.

Su Yangzheng (China) continues work on brachiopods and biostratigraphy of northeastern China, and is also doing doing Paleozoic stratigraphy and biogeography for the project "Reotectonics of the east Heilongjiang and Jilin provinces". He is also participating in work on "Regional stratigraphy of northeastern China".

Stuart J. E.Sutherland (U.K.) Outline of research: I am currently researching into late Silurian / early Devonian spores and chitinozoans of Cantabria, NW Spain. The research intends to link terrestrial and marine biostratigraphic schemes and investigate the rapid evolution of flora that occurred at this time.

Paul Swire (Malta) has no specific current research into the Silurian, but passes on the information of superb exposures (250 km along strike and vertical exposures of up to 1200 m) of Llandovery to Pridoli-age rocks near the village of Ghat in the Libyan Fezzat. The sediments are generally very fossiliferous and are represented by a basal transgressive shale (Tannezuft Formation) and an overlying regressive sandstone unit (Akakus Formation). He also enclosed a geological map of the region.

Lech Teller (Poland) Outline of research: Silurian graptolites and biostratigraphy.

Yuri Ivanovich Tesakov (Russia) Outline of research: Silurian stratigraphy of the East Siberia.

Alan T. Thomas (U.K) Research continues on Silurian trilobites from North Greenland in collaboration with Dr P. D. Lane. As part of a continuing study of British Wenlock trilobites, I am working-up data on variations in phacopid eye morphology.

Petro Tsegelnjuk (Ukraine) I am researching on morphology, taxonomy, evolution and biostratigraphy of Late Silurian monograptids from Voln' (Ukraine).

Adam Urbanek (Poland) Studies: Graptolites, fossil and Recent pterobranchs.

Viive Viira (Estonia) Outline of research: Ordovician and Silurian conodonts and biostratigraphy.

Wang Nian-zhong (China) Outline of research: Silurian-Devonian macro- and microfossils of vertebrates and their biostratigraphy.

Mark V. H.Wilson (Canada) Outline of research: Since 1990 I am increasingly involved in studies of Silurian and Devonian vertebrates, particularly thelodonts, heterostracans, cephalaspids, and acanthodians from localities in the Mackenzie Mountains, N.W.T. I am especially interested in the origin and significance of major features of body form as revealed by articulated specimens preserved in exceptional fossil deposits, and in the comparison of the microvertebrate record of these groups with what can be learned from articulated skeletons.

Ryszard Wrona (Poland) Outline of research: Lower Palaeozoic Chitinozoan biostratigraphy, in particular Silurian Chitinozoa from Poland and adjacent areas.

Zhang Tingshan (China) Outline of research: Silurian sedimentary environments and reefs on Upper Yangtze Platform.

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