

Origin of Comparative Morphology and Development (CMD) as a Section within the Canadian Society of Zoologists

- Archival Notes compiled by Louise Page (University of Victoria) with input from Richard Palmer (University of Alberta), May 2005.
- Presented in summary form to the Annual General Meeting of CSZ held at Queen's University, Kingston, Ontario, May 10-14, 2005.

December 2002 (Dalhousie University, Halifax)

The sequence of events that led to the establishment of a fourth section within the Canadian Society of Zoologists, to be known as 'Comparative Morphology and Development', began in a humble way during a conversation between myself (Louise Page, University of Victoria) and Roger Croll (Dalhousie University) on a snowy December day in Halifax. Roger and I were discussing our shared interest in marine invertebrate larvae and we began to lament the fact that individuals within Canada that studied invertebrate larvae were widely dispersed across a large country. There was little opportunity to interact within a national forum. We decided to investigate the possibility of organizing a symposium on marine invertebrate larval biology at a meeting of the Canadian Society of Zoologists.

This was an extremely naïve proposition. Our naiveté reflected the fact that neither of us had been active members of CSZ for many years and we had therefore forgotten that: 1) CSZ is structured around three Sections, 2) Symposia featured at each annual meeting are specifically organized by each of the three Sections according to the interests of the Section members (one symposium per Section per year), and 3) none of the existing three Sections within CSZ was a particularly suitable sponsor for a symposium on marine invertebrate larval biology.

A key point here is that, although Roger and I both considered ourselves under the rubric of 'Canadian Zoologist', neither of us were active participants in the national society that proposes to "advance the study of animals in their environment", and neither were many of our Canadian colleagues. The reason? Given the need for judicious spending of funds for conference attendance, it is difficult to justify attending a meeting that lacked a core group of individuals with shared research interests. The existing structure of CSZ did not seem amenable to incorporating a broader group of 'Canadian Zoologists'.

January 2004 (Society for Integrative and Comparative Biology, New Orleans)

Roger and I met at the annual meeting of the Society for Integrative and Comparative Biology, held in New Orleans in 2004, and resolved to send out an email to larval biologists across Canada to gauge the level of support for a symposium on Marine Invertebrate Larval Biology. Sally Leys (University of Alberta) was also at this meeting. She enthusiastically supported our efforts and recruited additional interest from faculty at the University of Alberta (Rich Palmer and Jeff Goldberg). In our email missives (see *Appendices #1 and #2*), we emphasized the networking advantages ensuing from participation in a *Canadian* venue for disseminating research results. Response to this

email was encouraging but many of the respondents noted that they do not routinely attend the CSZ annual meetings because the Society attracts little participation in the area of organismal biology outside of vertebrate physiology and parasitology. Nevertheless we encouraged the interested respondents to attend the CSZ meeting at Acadia University for further discussions over lunch (see *Appendix #2*).

May 2004 (CSZ, Acadia University, Wolfville, Nova Scotia)

A number of very productive discussions occurred at Acadia University. Although the discussions were spear-headed by the proposed 'Larval Biology Symposium', the most exciting outcome was a resolve to address what our group identified as a much larger issue - failure of the existing structure of the Canadian Society of Zoologists to embrace a sufficiently broad group of Canadian zoologists. Many of us do not see ourselves as comparative physiologists, parasitologists, or ecologists, although our research is nevertheless focused at the organismal level within the biological hierarchy. A number of our group use tools of molecular and cell biology to address research problems, but we interpret the results within the context of the whole organism. Others study organismal functional morphology, behaviour, or paleontological evidence for insights into ecological and evolutionary patterns.

For the record, the individuals that participated in the various discussions that occurred at Acadia University in May 2004 included: John Buckland Nicks (St. Francis Xavier), Roger Croll (Dalhousie University), Glenys Gibson (Acadia University), Jeff Goldberg (University of Alberta), Sally Leys (University of Alberta), André Martel (Canadian Museum of Nature), Ian Meinertzhagen (Dalhousie University), Louise Page (University of Victoria), and A. Richard Palmer (University of Alberta). We thank Joe's Food Emporium on Main Street, Wolfville for providing a congenial venue for these discussions.

Our group left the Acadia 2004 meeting with plans to do the following:

1. We would prepare a proposal to establish a new section within the Canadian Society of Zoologists. Sally Leys had recently been elected as a Council member of CSZ and she would therefore present our proposal to the meeting of the CSZ Council at their meeting in Ottawa, scheduled for November 2004.
2. Our proposal to CSZ for the establishment of a new Section within the society would include a plan to hold the Section's inaugural symposium in Edmonton, at the 2006 annual meeting.

It was suggested that the inaugural symposium for the new Section might have greater impact if it focused on a theme having wider interest than 'marine invertebrate larval biology'. A symposium that incorporated the theme of Evolution and Development was attractive, but a definite decision about this was not reached during the Acadia meeting. Furthermore, by the time the Acadia meeting ended, we had not yet reached a consensus about what our proposed new section should be called.

August 2004 (Bamfield Marine Sciences Centre)

The summer had slipped away while we were all frantically trying to meet summer research objectives before fall term started. Rich Palmer and I ran into each other at Bamfield Marine Sciences Centre in late August and prompted each other to get busy with finding a suitable name for the still hypothetical new Section and drafting a proposal for the Section to be submitted to Council for their November meeting. Difficulty with choosing a name reflected a certain amount of ambivalence about what disciplines and animal groups (all animals? just invertebrates? just marine invertebrates?) ought to be included.

September - November 2004 (University of Alberta & University of Victoria)

Much activity during the three months leading up to the November Council meeting of CSZ resulted in a name and a formal proposal for the Section. This interval included a brief period when a consolidation with Parasitology was considered.

Rich Palmer describes the events as follows:

On September 22, I [Rich Palmer] got together with several people for our regular Wed. afternoon "Cool Papers Group" at the Scholar's Pub. Talk eventually came around to the initiative for a new Section of CSZ as discussed at the Acadia meeting of CSZ. We tried brainstorming to come up with a name but to little avail. However, this discussion at least got the juices flowing. The next morning, Sally ran into Mike Belosevic, who suggested that something involving Parasitology might be worth considering. Later that morning, I received an email from Sally concerning Mike's suggestion (see *Appendix #3.a*) and I started to do some more thinking in the peace and quiet of my office about possible names. That's when "Comparative Morphology and Development" occurred to me, and I sent it around to those who had been at the Scholar's Pub to get their feedback (see *Appendix #3.b*). I received quite enthusiastic responses from Alex Eaves, Tara MacDonald and Shawn Parries [graduate students in Biological Sciences at the University of Alberta].

Remarkably, this happened a mere two days before I received Louise's first draft of the proposal for the new section. In my response to Louise I sent my suggestion for a Section name and reasons for its suitability: 1) it is not tied to any taxon, 2) it is broad enough to encompass a lot of the themes that we wanted to include (evolution, development, biomechanics, systematics), and 3) it is pretty distinct from the existing divisions of CSZ. I also mentioned that Al Shostak had offered to consult with us about our proposal and about the CSZ bylaws regarding formation of a new Section. Al has been the long-time treasurer of CSZ so he has the benefit of seeing how all the sections have worked (or not). He also sent me a list of the 2003 members of CSZ, which helped us contact people who might be interested in this new division. Louise responded favourably to the proposed name, but also voiced concerns that we all felt at the time about whether we could

actually pull together 30 or more members from within the existing membership of CSZ to support our proposed new Section (see Appendix #3c).

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As noted by Rich, I [Louise Page] penned a rough draft of a proposal for the new Section. However, Rich subsequently did a superb job of embellishing and modifying the draft to produce the document that Sally Leys tabled at the CSZ Council meeting in Ottawa in late November, 2004 (see *Appendix #4*). Glenys Gibson agreed to be an additional signatory to the proposal, which helped bolster the case that support came from across Canada. During the period since the 2004 Acadia meeting, Roger Croll had been on study leave in Australia.

November 2004 (Ottawa, Council meeting of Canadian Society of Zoologists)

We were thrilled to receive word from Sally Leys stating that Council had enthusiastically supported our initiative to create a new Section of CSZ (see *Appendix #5*). Tony Russell (University of Calgary) was particularly supportive.

The Society's bylaws stated that proposals to establish a new Section must be endorsed by 30 regular members of the Society. Since the annual CSZ membership drive (renewals and new recruits) was underway, Rich Palmer, Sally Leys, and Louise Page contacted colleagues across Canada to encourage them to become members of CSZ and to express support for the proposed new Section. Rich Palmer created a 'modified' CSZ membership application/renewal form for CSZ (pdf document that could be attached to an email) that included a 'check box' to indicate support for the Comparative Morphology and Development Section. Rich's efforts to recruit new members were particularly heroic.

February 04, 2005 (University of Alberta)

Al Shostak (University of Alberta), treasurer of CSZ, informed us that endorsements of the CMD Section had exceeded the required 30 regular members of the Society.

May 2005 (Queen's University, Kingston, Ontario)

After a more than 2 year gestation period, the Comparative Morphology and Development Section of CSZ was officially born at the 2005 CSZ meeting at Queen's University in Kingston. Rich Palmer designed a logo for the Section (see *Appendix #6*) and posters advertising the Section to other participants at the meeting.

The local organizing committee for the Kingston meeting of CSZ scheduled three contributed paper sessions under the section of Comparative Morphology and Development. These three sessions, which were chaired by Sally Leys, Remy Rochette (University of New Brunswick), and Rich Palmer, respectively, included a total of 13 papers (*Appendix #7*).

CMD held a luncheon business meeting on Thursday May 12 during the 2005 CSZ meeting at Queen's University and elected Rich Palmer as Section Chair and Tony Russell and Louise Page were named Vice Chairs for the coming year (see *Appendix 8*). Glenys Gibson (Acadia University) agreed to be Archivist and to compile minutes for the business meeting. Rich Palmer proposed setting-up a ListServe for communication among members of the Section and discussions began about potential invited speakers and potential sources of funding for the Inaugural Symposium of CMD to be held at the Edmonton meeting of CSZ in 2006. At the Banquet on Friday evening, Tony Russell proposed what we felt was a truly inspired title for this inaugural symposium of CMD - "Development, Morphology, and Evolution: the Triple Helix".

Appendix #1. Text of e-mail inquiring about interest in a Marine Invertebrate Larval Biology symposium organized within Canadian Society of Zoologists
(distributed Jan 14, 2004)

Dear Colleagues,

Canada possesses a large number of biologists interested in the development, behaviour, physiology, ecology and evolution of invertebrate marine larvae. Despite this fact, many of us remain isolated from our colleagues, having no national forum for the exchange of ideas nor even just to meet and talk about our interests. While senior investigators may be able to occasionally meet at international conferences (e.g., Larval Biology, SICB) travel expenses often preclude the ability for students to attend such meetings.

The purpose of this letter is to poll for your interest in trying to use the Canadian Society of Zoologists annual meetings to overcome this problem. It is now too late to organize a formal symposium at the upcoming meeting this May at Acadia University. However, we would like to organize a formal symposium on Larval Biology of Marine Invertebrates for the 2005 meeting at Queens. Discussion and plans for this meeting can begin at the 2004 meeting in Acadia among those that will be attending.

A short reply indicating your opinions on the worth of this plan and your willingness to participate this year or in the future would therefore be appreciated. We also ask for suggestions of other investigators who might be interested, noting that the compilation of an e-mail distribution list by itself may constitute a first small, but significant, step toward increased communication between us. (Eventually, future mailings may also include interested students and postdocs.)

Looking forward to hearing from you.

Sincerely,

Roger Croll

Louise Page

--

Dr. Roger P. Croll, Professor

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Appendix #2. Text of e-mail that comments on responses to the initial inquiry about interest in a Larval Biology Symposium

Hello all,

Many thanks for your comments and enthusiasm concerning the proposal to organize a symposium on developmental and larval biology of aquatic invertebrates. There is clearly significant interest and we look forward to further discussion at the Acadia meeting of CSZ in May, for those of you planning on attending.

Until then, we would like to comment on an issue raised by one of you, but which is probably on the minds of all of us - how to justify the cost of attending a Canadian meeting of widely spaced colleagues when larger international meetings might bring more 'bang for the buck'. Here are a few points by way of justification:

1. Many Canadian students are looking to stay in Canada for further studies. If those of us advising these students have a better knowledge of the broader interests and new research directions of our colleagues, we are better able to direct them to appropriate Canadian research laboratories. In short, better knowledge of the research going on in Canadian research labs will greatly help in the exchange and recruitment of graduate students and post-docs.
2. Meetings with Canadian colleagues can allow us to identify and discuss complementary strengths and resources, which can lead to formations of strong teams that are eligible for various funding opportunities. Discussion with colleagues from across the nation may also permit the identification of partners within the private sector, which are required for certain funding initiatives.
3. Spin-off benefits from raising the profile of Canadian research in the areas of development, behaviour, ecology, and evolution of larval invertebrates include:
 - increased awareness and use of Canadian marine stations
 - help in bringing these research areas to the table when biology departments discuss new faculty recruiting
 - serve as a welcome and resource centre for new faculty colleagues and new graduate students to the Canadian research community

Best wishes,
Louise Page & Roger Croll

Dr. Louise R. Page
Associate Professor
Department of Biology
University of Victoria
P.O. Box 3020 STN CSC
Victoria, British Columbia
Canada V8N 3N5

Appendix #3. Excerpts from selected emails discussing the naming of the new Section.

3.a. Thu, 23 Sep 2004. To Rich Palmer from Sally Leys

Rich,

I spoke to Mike Belosovic this morning in the mailroom. He forgets entirely about the idea for a new division, but then suggested a fusion with parasitology. I think some movement ought to be made on the front soon.

If with parasitology, perhaps it could be " Parasitology, Systematics, Development & Comparative Morphology". If not, perhaps just the latter three areas. An acronym...PaSDM or SyDM.

Sally

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3.b. Thu 23 Sep 2004. To the 'Cool Papers' discussion group from Rich Palmer

Hi All,

Further to our discussion about a new section for the Canadian Society of Zoologists at Scholars yesterday, how does the section name "Comparative Morphology & Development" sound to you?

It's quite distinct from existing sections and is generic enough to encompass most of the range of topics we were thinking of, including biomechanics, functional morphology, comparative anatomy, development, and evo-devo, and it could even include systematics. It also has the added benefit of not excluding any group of organisms.

Any thoughts?

Cheers, Rich

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3.c. Wed 6 Oct 2004. To Rich Palmer from Louise Page (cc: Sally Leys)

Hi Rich,

I admit that I've been hoping to keep the proposed new division of CSZ within the invertebrate realm - like SICB's DIZ. However, a taxonomic group (although not monophyletic!) is probably not a popular organizational theme these days. I agree that 'Comparative Morphology and Development' would definitely incorporate a huge number of Canadian zoologists that currently have no home within the existing CSZ structure. My only concern is finding 30 card carrying CSZ members, within the existing membership, to sign the petition for a new CSZ division. I came up with 10 people from the 2003 membership list whom I was confident would support this initiative. I note that the society allows membership in more than one division, but even so....

I suppose that we will need to beat the bushes to get people to join the Society so that they can sign our petition.

Sincerely,
Louise

Appendix #4. Proposal to Council of CSZ for formation of a new Section, to be called Comparative Morphology and Development

November 23, 2004

To the Executive Council of the Canadian Society of Zoologists:

Summary

As currently constituted, the Canadian Society of Zoologists (CSZ) promotes three themes, as represented by society sections: *Comparative Physiology and Biochemistry*, *Ecology, Ethology, and Evolution*, and *Parasitology*. Although these three sections have served the society well historically, other areas of zoological research — such as morphology, larval biology and development — do not fit comfortably within them. As a consequence, many Canadian zoologists feel a greater kinship with, and participate more actively in, the Society of Integrative and Comparative Biology (previously American Society of Zoologists) than with the CSZ. Therefore CSZ misses a golden opportunity to celebrate the full extent of contributions by Canadian zoologists, and to promote interaction and collaboration across the full spectrum of zoological research. We, the signatories below, therefore propose the creation of a new section to the CSZ to be called *Comparative Morphology and Development*. Canadian teaching and research institutions are home to many zoologists interested in morphology, larval biology and development, so we anticipate a rapid growth in membership once this new section is established. This new section will a) complement nicely the existing CSZ sections, with minimal overlap, b) increase overall membership in the CSZ, c) boost the stature of the CSZ in Canada, and internationally, by involving more Canadian zoologists, d) materially enhance the interactions, dialogue and intellectual cross-fertilization among the many Canadian zoologists working on morphology, larval biology and development, and e) broaden the scope of the society to better embrace Canadian zoology writ large. An enthusiastic group of zoologists from across Canada is ready to make this new section an exciting and vibrant element of the CSZ.

Proposal

- 1) To establish a section of *Comparative Morphology and Development* within the Canadian Society of Zoologists.
- 2) To debut this new section at the 2006 CSZ annual meeting in Edmonton with a symposium on *Larval Biology and the Evolution of Development*.

Proposed timetable

Nov. 2004- CSZ Council Executive asked to approve in principle the proposal to create a new section of *Comparative Morphology and Development*, subject to sufficient member interest.

March 1, 2005- A minimum of 30 dues-paying members will agree to join the new section.

May 2005- CSZ Council Executive asked to formally approve the new section's a) creation, b) interim chair (or co-chairs), and c) draft set of bylaws.

May 2006- The new section of *Comparative Morphology and Development* will sponsor its first symposium and meet to finalize the by-laws to govern the section and elect a chair.

Background

At the 2004 annual meeting of the CSZ at Acadia University in Wolfville, Nova Scotia, an informal meeting was held to discuss a proposal for a symposium on larval biology, to be held at a future CSZ meeting. The discussion soon expanded to reveal a long-standing disappointment with the current section structure of the CSZ. On the one hand, we agreed that annual meetings with Canadian colleagues are wonderful opportunities to exchange information relevant to collaborative grant initiatives, graduate student recruitment, innovative teaching ideas, and new research directions and discoveries. They are also a venue for welcoming young colleagues into the Canadian research community. Indeed, the Acadia meeting was an exemplary example of the many benefits of attending the annual meeting of the Canadian Society of Zoologists. On the other hand, many of us at the informal meeting admitted that we had not attended a CSZ meeting in years, simply because the Society's existing organization does not include a large sector of Canadian researchers that identify themselves as zoologists. In short, we feel that the Society's annual meeting attracts a far too restricted subset of Canadian zoologists. Many Canadian zoologists simply do not fit comfortably into any of the existing sections of the CSZ.

To remedy this situation, signatories to this application submit the following proposal for a new section of the Canadian Society of Zoologists. We feel that the proposed new section will welcome a much wider segment of Canadian zoologists into CSZ and to the significant benefits this Society offers as a broader national forum for exchange of ideas relevant to teaching and research in animal biology.

Justification

Canada possesses many distinguished biologists interested in functional and comparative morphology, biomechanics, morphometrics, larval biology, development, and the evolution of development. Nonetheless Canada lacks a national society that: 1) embraces this expertise, 2) promotes an exchange of ideas within this group to nucleate new research and collaborations, and 3) disseminates accurate information to the larger Canadian academic and lay communities.

For example, evolutionary developmental biology has emerged as an exciting new discipline and many labs now study the role of development in the evolution of animal body plans. Dr. Brian Hall (Dalhousie) has been a vocal promoter of this new research thrust on the international stage. Universities throughout the world have specifically recruited new faculty within this rapidly growing area, and Canada is no exception (e.g., Sally Leys- Alberta, Mike Hart- SFU, Ehab Abouheif- McGill). Yet these new Canadian researchers have no natural home within the current structure of the CSZ. The Society for Integrative and Comparative Biology (SICB), the American sister group to the CSZ, originally accommodated 'evo-devo' biologists within its *Division of Invertebrate Biology*, but the rapidly growing popularity of this research field soon led to a separation of the *Division of Evolutionary Developmental Biology* from its parent division within SICB. As a consequence, Canadian evolutionary developmental biologists are more likely to encounter each other at the SICB meeting than at the CSZ meeting.

Similar stories exist for Canadian zoologists interested in larval biology, functional morphology and biomechanics.

Other research areas encompassed by *Comparative Morphology and Development* that might attract new society members and could serve as themes for future symposia include:

- 1) Larval biology of marine invertebrates
- 2) Biomechanics of animal locomotion
- 3) Biomineralization and skeletal evolution
- 4) Function, development and evolution of modular organisms
- 5) Function, development and evolution of segmented organisms
- 6) Functional morphology of suspension feeding systems
- 7) Defensive strategies of planktonic invertebrates
- 8) Adaptive phenotypic plasticity

The 2006 annual meeting in Edmonton is a logical place to debut the new section for two reasons: a) historically, the University of Alberta is widely recognized for its contributions to larval biology by Dr. F. S. Chia, his students and colleagues, and b) two signatories to this proposal (Sally Leys, Rich Palmer) are evolutionary developmental biologists who currently reside there and are well-positioned to organize the debut symposium and section meeting.

Finally, preliminary discussions with the current Program Officer of the SICB *Division of Evolutionary Developmental Biology* (Dr. Eduardo Rosa-Molinar, University of Puerto Rico) has indicated a potential willingness to work collaboratively with the proposed CSZ section of *Comparative Morphology and Development* to co-sponsor (i.e., contribute some funding towards) the inaugural symposium at the 2006 annual meeting and possibly future symposia of common interest. Both societies stand to benefit from such a collaboration.

Whither CMD?

Armed with the blessing of the CSZ Executive that a new section of *Comparative Morphology and Development* be created (subject to adequate membership), we will work hard to bring new members into the society and to enhance the stature of the CSZ on both the national and international stage.

Thank you for considering our proposal.

Sally Leys
University of Alberta

Louise Page
University of Victoria

Rich Palmer
University of Alberta

Roger Croll
Dalhousie University

Glenys Gibson
(Acadia University)

Appendix #5. E-mail dated November 29, 2004 from Sally Leys to Rich Palmer and Louise Page reporting support by CSZ Council (Council meeting held during late November, 2004 in Ottawa) for the proposal to establish a new section of CSZ entitled Comparative Morphology and Development (reproduced with permission from S. Leys).

Hello Louise and Rich,

Just back, and can report that Everyone was very enthusiastic. Really. They couldn't contain themselves. It seems like they've tried various initiatives to increase membership over the last few years, but felt that this was the brightest suggestion in a long time.

I used all your points Louise, although I believe the proposal had them already convinced. There were a couple of queries about the title - CMD; I explained about the wish to include a broad group of people who might not see themselves as Evo-Devo or just Devo people. Tony Russell was particularly enthusiastic about the title and spoke out in support of it.

So, we have the go-ahead. We must obtain 30 full paying members - not students (who pay only \$20, and should be convincible if the PI joins), and not half members (we only get half dollars for half members), although half members nevertheless count for half, and illustrate the complementary nature of the proposed section. Several council members felt that colleagues of theirs would be interested; I suggest an email to department heads to be passed on generally to departments might also be a good idea.

We must also hold a section meeting at Queens to ratify the draft bylaws (which will have passed council at that meeting) in order to obtain section status at that time for the following year. Thus we need a number of members to attend the Queens meeting, something we must confirm with people when contacting them. Abstracts will be due for the May meeting at Queens by mid-February. With 30 members we would obtain \$450 (approx. Al says), in addition to financial support for the symposium, money that's raised each year by the local organizing committee.

That's all. It was pouring in Ottawa. I slipped out yesterday before they shut the airport down for Bush's arrival. Good timing.

Sally

Appendix #6. Logo designed by Rich Palmer for the Comparative Morphology and Development section of CSZ



Appendix #7. Papers presented at the 2005 CSZ meeting held at Queen's University within the first three contributed paper sessions sponsored by the new section of Comparative Morphology and Development.

Wednesday/ mercredi
1120 Biosciences

Comparative Morphology and Development (Chair: Richard Palmer)

1330	HEPPLESTON, AUDREY C & HCE LARSSON Redpath Museum, McGill Univ. Limb bud perturbations fail to support the Digital Arch Model Les perturbations lors de la formation des bourgeons des membres ne soutiennent pas le modèle de l'arche digital
1345	HOLT, SARAH M & RJ BROOKS Dept. of Integrative Biol., Univ. of Guelph: Département de Biologie Intégrative, Université de Guelph Investigating latitudinal variation in development rates Investigation de la variation latitudinale des taux de développement
1400	LEYS, SALLY P. Dept. of Biological Sciences, Univ. of Alberta Glass sponge development: formation of syncytia by fusion of blastomeres. Développement d'une éponge de verre: formation des syncytiums par la fusion des blastomeres.
1415	SMITH ¹ , RICHARD W & C OTTEMA ² . ¹ Biologie, McMaster: ² Départ d'aquaculture et pêche, Université Agricole, Wageningen, Holland. Growth, oxygen consumption, and protein and RNA synthesis rates in the yolk sac larvae of the African catfish. Croissance, consommation d'oxygène, et taux de synthèse de protéines et d'ARN dans le sac vitellin de larves du poisson-chat africain.
1430	TOMPKINS, GABRIELLE J & SP LEYS Dept. of Biological Sciences, Univ. of Alberta Glass sponges arrest pumping in response to increased sediment loads Les éponges de verre arrêtent de pomper en réponse à une augmentation de sédiments

Thursday/ jeudi
1120 Biosciences

Comparative Morphology and Development (Chair: Sally Leys)

13:30	BROOKES, JANE & R ROCHETTE Dept. of Biology, Univ. of New Brunswick (Saint John) Mechanisms responsible for adaptive shell thickening in the intertidal gastropod <i>Littorina obtusata</i> Mécanismes d'une réponse adaptative de l'épaisseur de la coquille du gastéropode intertidal <i>Littorina obtusata</i> au risque de prédation
13:45	DE BOEF, MARIA E. & HCE LARSSON Redpath Museum, McGill Univ. New metrics for quantifying bone microstructure Nouveau système de mesures pour quantifier la microstructure osseuse
14:00	DOYLE, SEAN P, BA MACDONALD & R ROCHETTE Dept. of Biology, Univ. of New Brunswick Saint John: Département de Biologie, Université du Nouveau-Brunswick à Saint John Contribution of water temperature to geographic variation in shell thickness of <i>Littorina obtusata</i> (Gastropoda) in the Gulf of Maine Contribution de la température à un cline latitudinal de l'épaisseur de coquille du gastéropode <i>Littorina obtusata</i> dans le Golfe du Maine
14:15	EDGELL, TIMOTHY & R ROCHETTE Dept. of Biology, Univ. of New Brunswick, Saint John Integrating large and small scale patterns of environmental heterogeneity to elucidate causality of intraspecific variation in shell architecture of an intertidal snail Des études à différentes échelles spatio-temporelles mettent en évidence les mécanismes de variation de l'architecture de la coquille d'un gastéropode intertidal
14:30	GIBSON ¹ , GLENYS & I PATERSON ² ¹ Dept. of Biol., Acadia Univ.: ² Biol. Dept., Dalhousie Univ. Diversifying the portfolio: Larval diversity is linked to reproductive investment in the polychaete, <i>Boccardia acus</i> Diversification du porte-folio: La diversité des larves est liée à l'investissement reproducteur chez le polychète : <i>Boccardia acus</i>

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Comparative Morphology and Development (Chair: Remy Rochette)

 Saturday/ samedi
1120 Biosciences

10:45	LARSSON, HANS CE Redpath Museum, McGill Univ. Pentadactyl ground state of the <i>Alligator</i> limb Pentadactyl – État fondamental des membres de l'alligator
11:00	MADDIN, HC & RR REISZ Dept. of Biol., Univ. of Toronto at Mississauga Histological microstructure of the <i>Xenopus</i> claw with reference to the evolution of claws in tetrapods Microstructure histologique de la griffe de <i>Xenopus</i> en référence à l'évolution des griffes chez les tétrapodes.
11:15	PALMER, A RICHARD Systematics & Evolution Group, Dept. of Biological Sciences, Univ. of Alberta The curious coiled cases of caddisfly larvae Les fourreaux embobinés curieux des larves des trichoptères
11:30	TOPPING, KAILA & G GIBSON Dept. of Biol., Acadia Univ. Forging a head: A tail of new frontiers Régénération de la tête chez le polychète marin <i>Pygospio elegans</i>

Appendix 8.

8.a. First business luncheon of CMD. Queen's University, May 12, 2005.

People seated around the table are (clockwise from left):

Liz Boulding (faculty, Guelph)
 Remy Rochette (faculty, UNB-SJ)
 André Martel (faculty, Canadian Museum of Nature)
 Mick Burt (faculty, UNB)
 Mary Arai (faculty, Calgary, Pacific Biological Station)
 Glenys Gibson (faculty, Acadia)
 Jay Fitzsimmons (M.Sc. student, Memorial)
 Audrey Heppleston (Ph.D. student, McGill)
 Hans Larsson (faculty, McGill)
 Lucy Lee (faculty, Wilfrid Laurier)
 Al Shostak (staff, Alberta)
 Louise Page (faculty, Victoria)
 Tony Russell (faculty, Calgary)
 Rich Palmer (faculty, Alberta)

(photo by Sally Leys, faculty, Alberta)



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8.b. Rich Palmer. First Chair of Comparative Morphology & Development giving presentation at 1st business meeting, Queen's University, May 12, 2005.
(photo by Sally Leys).

