



# BSDB NEWSLETTER



No. 15  
Spring 1987



# FORTHCOMING BSDB MEETINGS

## AUTUMN 1987

This September the BSDB is holding two meetings, the first in Durham and the second in Bath. Full details of these meetings are given below and the booking forms are in the 'Centre Section' of this Newsletter. Make sure you use the right booking form for the right meeting!

Durham: - 16th - 18th September, 1987.

### THE IMMUNOLOGY OF DEVELOPMENT

This is a joint meeting with the Materno-Fetal Immunology Group, at which there will be two major sessions. On Wednesday and Thursday (16th and 17th) we are holding an international symposium on the Developmental Immunobiology of Xenopus, which will be followed on Friday, 18th by a workshop on the Thymus, with contributions from workers using comparative and mammalian models. On Thursday and Friday (17th and 18th) a joint meeting of the BSDB with the Materno-Fetal Immunology Group of the British Society for Immunology will consider the origins and properties of the extra-embryonic tissues of the mammal and in particular how these might influence the immunological relationships with the mother.

On Thursday morning the two sessions will combine under the guidance of Anne McLaren for talks on "The evolution of histocompatibility antigens" (Flajnik/Kaufman, Basel); "The molecular control of histocompatibility antigen expression during differentiation" (Kieran, Paris); "Transfection, transgenesis and histocompatibility antigen expression" (Holmes, Cambridge); "What else do histocompatibility antigens do?" (Curtis, Glasgow) and "The acquisition of immune function in development" (Edwards, Cambridge).

There will be a reception in Durham Castle and a tour of the cathedral on the evening of Wednesday, 16th. There will be a poster session (prize for the best poster) and a workshop on in situ hybridization as applied to the mammalian embryo on the evening of Thursday, 17th. This will be followed by an entertainment of the songs and music of Northumbria with piper, harpist and fiddler, plus a late bar!

### Provisional programme for the Xenopus meeting

1. Generation of clones and histocompatible families. Kobel (Geneva), Picard (Louvain).
2. Embryonic origins and early differentiation of haemopoietic cells. Turpen (Omaha), Katagiri (Sapporo, Japan), Smith (Omaha), Tochinnai (Sapporo).
3. Role of the thymus in T cell ontogeny and acquisition of tolerance to histocompatibility antigens. Horton (Durham), Manning (Plymouth), Nagata (Tokyo), Flajnik (Basel), Cohen (Rochester).

4. Metamorphosis, immunologic/endocrine interactions, interleukins. Cooper (Los Angeles), Ruben (Portland), Clothier (Nottingham), Rimmer (Aston), Rollins-Smith (Nashville), Jurd (Essex).
5. B cell ontogeny and immunoglobulin genes. Du Pasquier (Basel), Schwager (Basel).

#### Provisional programme for the mammal meeting

1. Origins and properties of extra embryonic membranes. Rossant (Toronto), Gardner (Oxford), Surani (Cambridge), Babinet (Paris), Monk (London), Graham (Oxford).
2. Immunological aspects of trophoblast. Sargent (Oxford), Billington (Bristol), Stern (Liverpool), Sutcliffe (Glasgow), Redman (Oxford).
3. Immunology and genetics of pregnancy disorders. Johnson (Liverpool), Lawler (London), Allen (Cambridge), Antczak (Ithaca), Stirrat (Bristol).
4. Workshop. Gaunt (Cambridge), Fleming (Cambridge).

Please return the booking form for this meeting to John Horton (local organizer) by Friday, 3rd July, 1987. If you wish to present a poster, please send the title and abstract to Dr. Horton by the same date.

Use the poster enclosed with this Newsletter to advertise the meeting in your department or Institute.

JANET ROSSANT  
is the  
VIRGIN ATLANTIC  
Lecturer

CHARLES BABINET  
is the  
AIR UK  
Lecturer

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Bath : 21st-23rd September, 1987.

This is the BSDB/Company of Biologists Symposium on

#### CRANIOFACIAL DEVELOPMENT

The meeting is organized by Peter Thorogood and Cheryll Tickle and the proceedings will be published as a supplement to Development. The programme is as follows:

Monday, 21st September

#### EVOLUTION AND MORPHOGENESIS OF THE HEAD

Chairman - Harold Slavkin (Los Angeles)  
Carl Gans (Ann Arbor)  
Ed Gilland (Harvard)

#### C O F F E E

Sarah Wedden/Cheryll Tickle (London)  
Mark Ferguson (Manchester)

General remarks by Chairman/Discussion

#### L U N C H

#### THE CEPHALIC NEURAL CREST AND PLACODES

Chairman - Nicole Le Douarin (Nogent)  
Gordon Tucker (Nogent)  
Jan Lofberg (Uppsala)

#### T E A

Brigid Hogan (London)

General remarks by Chairman/ Discussion

#### POSTER SESSION

#### C O N F E R E N C E D I N N E R

Tuesday, 22nd September

#### PATTERNING OF CONNECTIVE TISSUES IN THE HEAD

Chairman - Brian Hall (Dalhousie)  
Drew Noden (Cornell)  
Peter Thorogood (Southampton)

#### C O F F E E

Andrew Lumsden (London)  
General remarks by Chairman/Discussion

#### L U N C H

#### PATTERNING OF NERVE AND SENSE ORGANS IN THE HEAD

Hendrik van der Loos (Lausanne)  
Alun Davis (London)  
Lewis Tilney (Philadelphia)

#### T E A

Jonathan Bard (Edinburgh)  
General remarks by Chairman/Discussion

#### WORKSHOPS

- (i) 'Cellular and molecular aspects of cephalic neural crest development'.



Convenors - Don Newgreen (Manchester), Jim Bee (London)

(ii) 'Strategies of head development'.

Convenors - Pere Alberch (Harvard), Ed Kollar (Farmington)

D I N N E R

CIVIC RECEPTION AND ROMAN BATHS

Wednesday, 23rd September

ABNORMALITIES OF CRANIOFACIAL DEVELOPMENT

Chairman - Malcolm Johnston (Chapel Hill)  
David Poswillo (London)  
Kathy Sulik (Chapel Hill)

C O F F E E

Bob Williamson (London)  
General remarks by Chairman/Discussion  
Lewis Wolpert (London)

L U N C H

END

Please return booking forms for this meeting to Peter Thorogood by 7th August, 1987. If you wish to present a poster, please send the title and abstract to Dr. Thorogood by the same date. A prize will be awarded for the best poster.

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SPRING 1988

As usual the Spring meeting is a joint BSDB/BSCB/Company of Biologists Symposium meeting. This will be held in Bristol from Monday to Friday, 11th-15th April. The local organizer is Beverley Randle.

The BSDB/Company of Biologists Symposium is on

MECHANISMS OF SEGMENTATION

The organizers, Vernon French, Phil Ingham and Jonathan Cooke write:

Segmentation is a fundamental feature of body organization of the annelids and arthropods and, in a rather different form, of the chordates. During early development these diverse embryos each become subdivided into a precise number of similar but unique units arranged in a precise sequence, and the mechanisms by which this is achieved constitute a central problem of developmental biology.

Recently, rapid advances have been made in the study of segmentation,

using techniques ranging from traditional embryology (lineage analysis and 'cut and paste' experiments) to the molecular analysis of gene products known to be involved in the process. However, the sheer volume of diverse experimental results can be perplexing for the non-specialist and thus this meeting has two major aims:

1. To integrate the embryological, genetical and molecular results from the best known embryo, that of *Drosophila*, to give a comprehensive picture of one mode of segmentation.
2. To consider the degree of similarity in mechanisms of segmentation in *Drosophila*, in other insects (where segments appear sequentially during local growth), in leeches (where segments are generated by a precise lineage), and in vertebrate embryos.

Speakers who have already agreed to attend include:

Akam (Cambridge), Davidson (Edinburgh), Dohle (Belgium), Gehring (Basle), Gruss (Heidelberg), Howard (Columbia), Jackle (Tubingen), Jacobson (Austin), Kimmel (Eugene), Kornberg (San Francisco), Laughon (Madison), Lawrence (Cambridge), Mahon (NIH), Martinez-Arias (Cambridge), Meinhardt (Tubingen), Sander (Freiburg), Stern (Oxford), Weisblat (Berkeley) and Weischaus (Princeton).

The BSCB/Company of Biologists Symposium is on

STEM CELLS

and is organized by T.M. Dexter, C.S. Potten and B.I. Lord.

In addition to the main Symposium topics, the BSDB is organizing sessions on fertilization and spermatozoa, while the BSCB is holding talks on gene amplification, second messengers and retroviruses. There will also be a BSCB workshop on *in situ* hybridization.

Full details of this meeting will be announced in the Autumn Newsletter

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AUTUMN 1988

For 18th-22nd September 1988 the BSDB is organizing a teaching course entitled 'Brush up your Development'. This will be held in Brighton and is intended to allow teachers of developmental biology to catch up with the latest advances, both in our understanding of development and in the techniques used to study the subject.

Chris Ford would be grateful to receive practical protocols, videos and teaching films that may be useful for this course.

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SPRING 1989

The location of the Spring 1989 Symposium meeting has not yet been

decided, but the topic is likely to be 'Towards the molecular basis of morphogenetic signalling', proposed by Rob Kay.

## OTHER MEETINGS OF INTEREST

European Society of Human Reproduction and Embryology  
Cambridge, 28th June - 1st July, 1987

You will have received details and booking forms for this meeting already. There are three sessions organised jointly with the BSDB. A session on Monday, 29th June on **Molecular Embryology** includes presentations by Jones, Akhurst, Reik, Stewart, Grosfeld, Harbers and Neuberger. A session on Tuesday, 30th June, **The Oocyte and Preimplantation Embryo**, includes papers by Moor, Geraci, Braude, Ozil, Mandelbaum, Urner and Motter. A session on **Implantation and Postimplantation Growth** on Wednesday, 1st July includes papers by Ellington, Graham, Evans, Beddington, Hearn and Miller. There is also a workshop on **Transgenic Mice** (Surani and Reik) on Wednesday, 1st July.

Sessions for free communications are available on Monday, 29th and Tuesday, 30th June on **Early Embryology**.

Other sessions include **prenatal diagnosis, ectopic pregnancy and grafting fetal tissue**.

Details from Professor R.G. Edwards, Department of Physiology, Downing Street, Cambridge.

The BSDB wishes to thank **Olympic Airlines** for their sponsorship.

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British Society for Cell Biology  
Wye College, Ashford, Kent. 1st-4th September, 1987.

### FROM CELL RECEPTORS TO GENE REGULATION

The aim of this meeting is to bring together areas in which factors interact with receptors and consequently induce gene activity. Topics include growth factors and their receptors, signal transduction systems and inducible genes. Speakers include C. Stiles (Harvard), T. Hunter (Salk Institute), J. Heath (Oxford), R. Treisman (Cambridge), A. Hall (Chester Beatty), A. Wakeling (ICI), G. Foulkes (New York), P. Parker (London), P. Newell (Oxford), E. Jensen (Zurich), S. Green (Strasbourg), W. Wahli (Lausanne), P. Godowski (San Francisco), G. Schutz (Heidelberg), I. Kerr (London), J. Williams (London), S. Goodbourne (Harvard) and P. Searle (Birmingham).

Fees are £100, to cover registration, accommodation, and all meals. BSCB members pay £85. Participants are limited to 120 and applications must be received by 30th June. Unsuccessful applications will be returned

with fees. Apply with telephone and telex numbers to:

Dr. J. Knowland,  
Dept. Biochemistry,  
South Parks Road,  
OXFORD OX1 3QU.

State any special requirements (e.g. diet) and if car parking is required. Cheques in Sterling payable to BSCB (Wye College Account) must accompany application.

## CHAIRMAN'S REPORT 1986-7

The past year has seen considerable activity by the Society, and for the coming year we plan more - three meetings rather than the usual two. Our Autumn sessions are designed for special interest groups within the Society. If you want to organise such a discussion or workshop meeting and would like to do it with the organisational and financial help of the BSDB, write to Nigel Holder (address at the end of Newsletter). If you prefer a grander Symposium for the Spring, we also want to know.

With Chris Wylie's appointment to the Editorship of *Development*, Jim Smith has taken over the role of Publications Secretary. This is his second Newsletter - plaudits (many) and bricks (few) to Jim please. Sadly, Brigid Hogan has resigned her membership of the Committee. Brigid has worked hard to improve liaison between our Society and the BSCB, for which we thank her. The work of liaison will continue. Rob Ransom also leaves the Committee this year and we are grateful to him for all the work he has done for the BSDB.

Audrey Harris has agreed to spearhead a membership drive. You can help her by recruiting members in your laboratory. It is particularly advantageous to combine membership with cut-price subscription to *Development* (all of which is tax deductible - form for ordering *Development* enclosed). The more members we have, the more we can subsidise meetings, travel etc., since the Company of Biologists gives us a per capita grant.

Finally, our venture into the course of lectures and practicals for teachers of developmental biology is new. "*Brush up your Development*" is an attempt to produce an update course covering the main areas of developmental biology. The course will be held in Brighton from 18th-22nd September, 1988. Chris Ford welcomes contributions from the membership in the way of videos, practical protocols etc.

Martin Johnson.

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## TREASURER'S REPORT

I am pleased to report that the society is financially healthy. We have moved sufficiently close to our aim of having enough money to run two or three symposia (as insurance in case our contract for publishing these be terminated for any reason) that we will be able to spend more on better meetings.

With the increase in subscription rate we had a fall in membership which meant that we obtained only a marginal increase in subscription income in 1985. Fortunately the C.O.B. agreed not to reduce our per capita grant and membership is again creeping up.

We are still receiving some income from previous symposia which adds to our income. At the moment we have still been able to run a system where there is no registration fee for members to attend our meetings or symposia. We will only charge this if it becomes necessary to maintain the quality of the meetings.

We are purchasing a small computer in 1987 for use by the secretary for membership lists and maintaining society information. We hope that this will make the job of secretary easier and our service to the members more efficient.

We were able to help several young scientists attend meetings in the U.K. and abroad. We will continue to do this and have offered some additional awards for travel to the EDBO Meeting in Helsinki for 1987.

Priority is given to student members of the society to attend BSDB meetings. Any remaining money within the £1,000 set aside for awards is given to student members to travel abroad or very rarely to postdocs with no other source of funding to attend BSDB meetings. For application forms please contact the treasurer in advance of the meeting.

The financial statement for 1986 is presented on the next 4 pages of the Newsletter.

Mary Bownes

## British Society for Developmental Biology

Tel. 031-667 1081  
Extn. 2706

From the Treasurer

Dr. Mary Bownes  
Department of Molecular Biology  
University of Edinburgh  
King's Buildings  
Mayfield Road  
EDINBURGH EH9 3JR

### FINANCIAL STATEMENT FOR YEAR 1986

Charity Reg. No. 270863

#### Balance Sheet

1985		1986
	<u>Investments</u>	
4251.99	National Savings	4728.77
1000.00	Borough of Redbridge (Ann. Int. to Current Acc.)	1000.00
584.38	Treasury Stock (Ann. Int. to Current Acc.)	584.38
<hr/>		<hr/>
5836.37		6313.15
	<u>Accounts</u>	
1176.85	Current	3027.13
14516.15	Deposit	20327.75
1656.13	Investment	1808.28
<hr/>		<hr/>
17349.23		
<hr/>		
23185.50	<u>TOTAL ASSETS</u>	<u>31476.31</u>
	Represented by:-	
	Income	24105.43
	Expenditure	15814.62
	Balance from 1985	<u>23185.50</u>
		31476.31

Sheet 2.

Prepared by:-

MARY BOWNES,  
TREASURER.

19th March, 1987

*Mary Bownes*Auditor's Report

I have examined the balance Sheet and the statement of Income and Expenditure for the year 1986 and report that they are in accordance with the records and vouchers I have examined.

19th March, 1987

*E. Mollot*

Accepted by Committee on

Signed Chairman,  
M. Johnson*M. Johnson*Secretary,  
C. Ford*C. Ford*

Sheet 3.

Expenditure Sheet

Travel Grants	1058.00
Oxford Meeting Advances	1860.00
Newsletter, photocopying, postage	1472.93
Travel expenses committee, officers	521.20
Norwich Symposium and meeting	6703.20
Audit fee	40.00
Sussex Meeting	1350.00
Nature Advert (meeting)	179.40
Bath Meeting Advance	1000.00
Durham Meeting Advance	250.00
Biological Council Sub.	17.50
Secretarial Assistance	125.00
EDBO Subscription	<u>1237.39</u>
TOTAL	15814.62

Sheet 4.

Income Sheet

Subscriptions	4223.20
Mailing leaflets	90.50
B.S.D.B. Symposia (From C.O.B.)	8500.00
C.O.B. Grant	5300.00
Royalties	1213.15
Treasury Stock dividend	68.74
Redbridge Bond dividend	90.54
National Savings interest	476.78
Deposit Account interest	742.60
Investment Account interest	152.15
Refund on Trent Park Meeting	1744.09
Refund on Norwich Meeting	1337.18
Untraced Income	<u>167.00</u>
TOTAL	24105.43

This 'Centre Section' is designed to be removed without damaging the rest of the Newsletter. It contains a form for subscribing to Development, a membership application form, and booking forms for the Durham and Bath meetings.



## DEVELOPMENT

Members of the BSDb are entitled to a reduced subscription to Development. For only £35 you will receive twelve issues, including the BSDb Symposium volume 'The Sex Chromosome and Sex Determination', edited by P. Goodfellow, J. Wolfe and I. Craig. This represents remarkable value for money.

.....

TO:           Development.  
              c/o The Biochemical Society Book Depot,  
              P.O. Box 32,  
              Commerce Way,  
              COLCHESTER,  
              Essex CO2 8HP,  
              U.K.

Please enter my subscription to Development. I am a member of the BSDb, and undertake not to pass my subscription copies on to a library. I enclose a cheque for £35 made payable to the Biochemical Society Book Depot.

Signature:.....

Name and Address (BLOCK CAPITALS, PLEASE):.....

.....

.....

The British Society for Developmental Biology

Autumn Meeting, 16-18 September 1987  
University of Durham

## BOOKING FORM

(Please complete one form per person)

Name \_\_\_\_\_

Institute and address \_\_\_\_\_

<i>Accommodation and meals</i> (at Van Mildert College, close to Science Site)	Cost £	Please tick
<i>Tuesday 15th</i>		
Welcome buffet	4.25	<input type="checkbox"/>
Bed and breakfast	11.00	<input type="checkbox"/>
<i>Wednesday 16th</i>		
Lunch	3.75	<input type="checkbox"/>
Tour of Cathedral/Castle followed by sherry reception in Castle (4.00-6.00pm)	1.50	<input type="checkbox"/>
Conference Dinner (wine included)	11.00	<input type="checkbox"/>
OR		
Buffet	4.25	<input type="checkbox"/>
Bed and breakfast	11.00	<input type="checkbox"/>
<i>Thursday 17th</i>		
Lunch	3.75	<input type="checkbox"/>
Dinner, followed by music and songs of Northumbria (9.30-11.00pm)	6.00	<input type="checkbox"/>
Bed and breakfast	11.00	<input type="checkbox"/>
<i>Friday 18th</i>		
Lunch	3.75	<input type="checkbox"/>
Dinner and farewell get-together	5.50	<input type="checkbox"/>
Bed and breakfast	11.00	<input type="checkbox"/>
<i>Registration</i>		
Member (BSDB)*	5.00	<input type="checkbox"/>
Non-Member	25.00	<input type="checkbox"/>
Total cost		£ <input type="text"/>

\* Registration of BSI members will be paid by MFIG

Make cheques payable to 'BSDB Conference Account'

A limited number of twin-bedded rooms will be available on request (£22.00).

Special diets requested: vegetarian ☐; other, please specify

Further details of the academic and social programme, including information on travel to Durham, conference location, etc. will be sent on receipt of booking form.

PLEASE RETURN BOOKING FORM BY FRIDAY 3 JULY TO:

Dr J. D. Horton, Department of Zoology, University of Durham, Science Laboratories, South Road,  
Durham DH1 3LE, UK.



The British Society for Developmental Biology

# Craniofacial development

University of Bath, 21st–23rd September 1987

## REGISTRATION/BOOKING FORM

### [A] Accommodation and meals:

Accommodation is in a university hall of residence; reserved parking will be available. The programme starts at 9.00a.m. on Monday 21st and finishes at lunchtime on Wednesday 23rd. Lunch on Wednesday is bookable. Tick appropriate boxes: enter totals.

	Sun. 20th	Mon. 21st	Tue. 22nd	Wed. 23rd	Subtotal
Bed and breakfast: £12.30 (includes tea and coffee)					
Lunch*: £4.25					
Dinner: £4.65					
Conference dinner: £13.00					

\* Please note: booked lunch on campus is advisable.

Total £

### [B] Registration fee:

BSDB members: no registration fee

Non-members: £20

Tick box

☐  
☐

Grand total £

POSTERS: I intend to present a poster entitled

and I enclose an abstract of no more than 300 words.

*Return this form to:* Dr P. Thorogood, Department of Biology, Medical & Biological Sciences Building, Bassett Crescent East, Southampton SO9 3TU, by 7th August.

I enclose a cheque for £, made payable to 'BSDB Bath 87'.

Name. Sex M/F

Address

Tel.

APPLICATION FOR MEMBERSHIP

FULL NAMES (in block capitals) .....

TITLE ..... DEGREE(S) .....

PROFESSIONAL ADDRESS .....

POSTAL CODE .....

\*I wish to apply for ordinary (£10)/student (£5) membership of the Society.

Applications must be supported by two members of the Society, who should sign below:

.....

.....

RESEARCH INTERESTS .....

.....

.....

.....

Please return this form, together with the completed Banker's Order form overleaf, to the Secretary: Chris Ford, School of Biological Sciences, University of Sussex, Brighton BN1 9QG.

For Society's Use

Received ..... Acknowledged .....

Subscription ..... Mailing List .....

Elected ..... Informed .....

\*Delete as applicable.



## ANNOUNCEMENTS

### OLYMPIC AIRLINES

Olympic Airlines have sponsored Dr. I.E. Messinis as a BSDB speaker at the 3rd European Congress of Human Reproduction and Embryology this summer. The Society wishes to express its gratitude for this support and to draw the attention of members travelling to Greece to the support that the airline has given us.

### BSDB POSTER PRIZES

The Oxford Y Chromosome meeting saw the revival of the BSDB Poster Prize scheme. The winning poster was selected by Mary Bownes, Jim Smith and Chris Wylie and the prize of £50 goes to Roland Roberts for his poster 'Identification of an 11kb, Y-specific, low copy sequence mapping to distal Yp'.

Prizes of £50 will also be awarded at Durham and Bath in September.

### DEVELOPMENT

One of the many advantages of membership of the BSDB is a reduced subscription to Development. For just £35 members will receive twelve issues, including the proceedings of the successful and stimulating Y Chromosome meeting in Oxford. To make it simple to subscribe the tear-out 'centre section' of the Newsletter includes a Development subscription form. There is also a BSDB Membership application form: for non-members it's cheaper to join the BSDB and subscribe to Development for £35 than to not join and have to pay £50!

### WRITE TO YOUR M.P.

Many of our members will be disturbed about the lack of funding for research in this country. In an election year a good way to make your opinions heard is to lobby your M.P. Write to him or her or, better, pay a visit. Scientists are usually rather quiet constituents and your M.P. may be in for a surprise!

TO: The Manager,

..... (Bank),

..... (Address)

.....

.....

Please pay to the British Society for Developmental Biology,

Account No. 00867675,

Barclays Bank Limited,

Oxford Circus Branch (20-64-88),

15, Great Portland Street,

LONDON W1N 6BX.

the sum of £ ( ..... pounds) on 1st October, 198

and on the same day each succeeding year unless this instruction is altered in writing by me.

Signature ..... Account No. ....

Name ..... Date .....

Address .....

.....

.....

.....

## BOOK REVIEWS

### Manipulating the mouse embryo : A laboratory manual

Brigid Hogan, Frank Constantini and Elizabeth Lacy  
(Cold Spring Harbor, 1986). ISBN 0-87969-175-1  
\$60 (332 pages)

Many BSDB members will have seen Martin Johnson's review of this book in *Trends in Genetics*. Martin was impressed, suggesting that all laboratories aspiring to the genetic manipulation of the mouse buy at least two copies immediately. I would go further and suggest that all, even non-mammalian, embryologists will find the book valuable and interesting. This is for several reasons.

For bedtime reading the manual opens with a fascinating account of the history of mouse developmental genetics and continues with one of the best descriptions of mouse embryo development I have come across (perhaps it's because I don't look at mouse embryos very often, but I have enormous difficulty in remembering just what's going on and when; this will be the description I go back to).

Five of the remaining six chapters are for the specialist, dealing with setting up a colony for the production of transgenic mice, the recovery, culture and transfer of embryos, the introduction of new genetic information into the embryo, the isolation of pluripotential stem cell lines and the *in vitro* culture of eggs, embryos and teratocarcinoma cells. Like the rest of the book these chapters are extremely well written, clear yet with a light touch. The information is obviously born of hard-won experience. The penultimate chapter is of more general interest and concerns the visualization of genes and gene products - techniques used by all developmental biologists. Chromosome banding, *in situ* hybridization and immunofluorescence are covered in sufficient depth to enable a novice to carry out the procedures from scratch, and the authors offer useful tips not usually available in technical manuals. (Although sometimes they could be more explicit - just what sort of "antiboredom device" do they recommend taking into the darkroom while dipping slides for autoradiography?)

The book ends by listing the suppliers of relevant chemicals and has appendices describing the design of a microinjection set-up, the linkage map of the mouse, and listing further suggested reading. You get the impression that with this book in one hand and a generous MRC programme grant in the other, you too could set up a mouse molecular embryology lab. I only wish a book like this was available for frog people!

Jim Smith

---ooOoo---

### Monographs in Developmental Biology : Experimental Embryology of the mouse

K. Burki (S. Karger, Basel, 1986). ISBN 3-8055-4376-X  
£27.50 (78 pages)

Until quite recently, experimental mammalian embryology was limited to a few manipulative techniques mainly using very early embryonic stages. Now it is possible to swap nuclei between eggs, alter the genome permanently and culture embryos (albeit for limited periods) well beyond the normal period of implantation. With the advent of new methods, a number of methodology books have appeared describing the many techniques now essential to modern mammalian embryology. "Experimental Embryology of the Mouse" by Kurt Burki is one recent addition to this rapidly expanding family.

Everyone has their own bias as to what they consider a "successful" format for such books. Personally, I like large, clear printing which is easy to follow at the bench. The book should be virtually indestructible, to cope with inevitable accidents, and the writing and diagrams should be clear and assume that the reader knows relatively little. This makes it less likely that essential little steps in a method are excluded. Burki's monograph is certainly clearly written, the references are up-to-date and the techniques covered are important techniques which are covered well. However, the format is not easy to read whilst sitting at the bench and glancing at the book. Moreover, the cost at £27.50 for 61 pages of text (excluding references) is quite expensive, especially when compared to the excellent Hogan, Constantini and Lacy manual recently published by Cold Spring Harbor, which covers the same techniques and much more besides.

Andy McMahon  
Developmental Biochemistry  
NIMR

---ooOoo---

### Development and Regeneration of Skeletal Muscles

Eds. B. Christ and R. Cihak (S. Karger, Basel, 1986)  
ISBN 3-8055-4227-5. US \$99.50 (224 pages).

The title suggests that this symposium may be another one on differentiation and specific gene expression in muscle cells. However, it isn't. The meeting was a European Anatomical Congress, and the book is an unconventional collection with a core of experimental vertebrate embryology.

There are discussions of where the myoblasts of the trunk, head and limbs come from, with evidence from quail-chick chimeras. Other chapters describe how the specification of muscle differentiation in somites is affected by neighbouring tissues, and how tampering with skeletal elements in developing chick limbs changes the musculature. There are some structural studies of muscle cells and myofibrils by immunocytochemistry, and an interesting review on muscle regeneration, muscular dystrophy and satellite cells (the reserve myoblasts of adults).



On the negative side, the meeting was in 1984 and none of the bibliographies seem to go beyond that year, although publication was in 1986. Some contributions will interest few, even in the field, while others, which might have been useful to general readers and muscle-molecular biologists, fail to adapt their vocabulary and style to such readers. Lastly, note the price.

In summary, this symposium on muscle development concentrates on intact muscles and embryos at the expense of cellular and molecular aspects. It thus (quite refreshingly) errs in the opposite direction from most. But it will be easily readable only by specialists. We still need a meeting and a book integrating molecular, cellular and embryological research on this topic.

Dot Bennett  
Department of Anatomy,  
St. George's Hospital Medical  
School

---ooOoo---

#### Determinative Mechanisms in Early Development

Ed. C.C. Wylie (COB, 1986). ISBN 0-948601-05-1.  
£15 (197 pages)

This book is a collection of papers from the Annual Symposium of the BSDB which was held at the University of East Anglia last April. Casting one's eye over the contents page, one again realises what a diverse subject developmental biology has become both in terms of the array of species that is being studied and the range of approaches and methodologies that are being employed. Most would agree that this is healthy but it does present the organiser of a meeting (or the editor of a symposium volume) with certain snags. There is a danger of becoming desultory in an attempt to cover too much ground, and there may also be communication problems between scientists using widely different technologies. (Not all non-retrovirologists, for instance, know what 'SIN vectors' are).

This volume avoids these problems mainly through the quality of its contributions. In each case, the articles are written by some of the better scientists in the field. Many of the newer methodologies are discussed by the scientists whose innovations have made the techniques viable, and in the majority of cases the authors have taken the trouble to write a proper and intelligible paper or review article, which is not always the case with symposium volumes and for which one is grateful to the editor.

The second reason for the cohesion of these papers is the common theme. Not all the contributions really address the issue of 'Determinative Mechanisms in Early Development'; some are distinctly descriptive or methodological. Nonetheless, one feels that the diverse approaches are indeed all addressing the same broad questions.

All in all, this volume should be a very useful source of information for those people (like me) who did not attend the meeting. This is

particularly the case as (again unlike many symposium volumes) publication has been sufficiently prompt that one can still consider the work up to date. Needless to say, given that this is a Company of Biologists publication, the quality of printing and presentation are second to none.

I'm not a fan of symposium volumes. They rarely provide information that cannot be got from journals and they seem a poor investment of scarce library resources. This one, though, is worth having. It may not represent the complete picture of what's new in developmental biology, but it's as close as I've seen. And at £15 (or free to all you 'Development' subscribers) it's a mere snip.

Jack Price  
Laboratory of Embryogenesis  
NIMR

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#### Early Amphibian Development

Ed. Jonathan Slack (COB, 1985). ISBN 0-95087-09-86  
£15 (388 pages)

Not everybody knows that the study of amphibia has had a long and glorious history of discoveries that illuminate the whole of metazoan biology. It is perhaps to these 'pagans' that 'Early Amphibian Development' can be most strongly recommended. This splendidly produced volume contains a wide, varying guide to a variety of fascinating topics for which amphibians are the experimental material of choice. It represents the proceedings of a BSDB symposium held in Glasgow in March, 1985.

At the editor's suggestion a substantial amount of background information has been included in most chapters, which gives the book an absorbing quality usually absent from conference procedures. There is also a notable variety in experimental approaches used by contributors ranging from experimental embryology to molecular biology. The topics unfold coherently, starting with the mysteries of oocyte and egg organization and then moving on to the relationship between the body plan of the adult frog and the cyto-architecture of the just-fertilized egg, conveying to the reader the unique importance of amphibia in understanding the problem. It appears that cytoplasmic elements of an unknown kind present in the egg may define the principle polarities of the developing embryo.

Later chapters describe the fascinating phenomenon of induction by which certain parts of the early embryo, possibly specified by these cytoplasmic elements, instruct other parts of the embryo to differentiate into new cell types without themselves succumbing to the same stimulus. A section on region and stage-specific markers includes chapters on transcripts and histologically identifiable structures that appear as the embryo starts to take form. This leads on to studies of gastrulation and neurulation that range from classic embryology to investigation of the role of fibronectin in gastrulation. A section on the cell cycle and chromosome replication in early development illustrates some more unique insight into biology provided by the amphibian, in particular the important roles of maturation promoting factor, cytostatic factor and the nucleoplasmin in



cell divisions and chromatin assembly.

To sum up, this is a book that will be useful to those who are active in the field, but will be interesting to a much wider audience. Who knows, if Prince Edward had seen it in time he might have resisted the siren calls of those other amphibians of the Globe and Laurel.

Michael Sargent  
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#### Reproduction in mammals: 5. Manipulating reproduction

Eds. C.R. Austin and R.V. Short (Cambridge University Press, 1986).  
ISBN 0 521 314968 (paperback) £9.45. ISBN 0 521 307643  
(hardback) £27.50 (235 pages).

Here in one package is the answer to the problem of what to do with aunt Matilda's book token, of how to keep the students interested in your half course unit on reproduction and development, and of what to read on the train that looks erudite but doesn't make you fall asleep. Austin and Short have put together a multi-author book that is consistently thought-provoking and packed with useful information.

The book contains seven chapters covering the related subject of fertility and contraception but the authors appear to have been encouraged to discuss the wider implications of their subjects and not just the simple mechanics as is normal in a scientific text. Betteridge describes the importance of animal products as a source of food then describes methods for improving fertility in domestic animals pre- and post- fertilization. Short discusses the overall strategies that one can use for limiting the size of families and speculates about future contraceptive techniques. Potts looks more specifically at contraception and family planning in the developing world and at how well different programmes have worked. Vessey examines the benefits and risks of contraception to the individual rather than at the population level. Cohen, Fehilly and Edwards make a complete change of direction in their chapter on alleviating human infertility. McLaren has the shortest but most speculative chapter on possible future techniques in the field of reproductive biology. Austin closes the book with a chapter on the consequences of unrestrained population control and the causes of resistance to its regulation.

This book will be equally at home in your classroom and on your coffee table at home. Who knows, aunt Matilda may even like it so much that she buys you the other volumes next Christmas.

Dennis Summerbell,  
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NIMR.

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#### Selective neuronal cell death

Eds. G. Bock and M. O'Connor. Ciba Foundation Symposium 126  
(J. Wiley & Sons, 1987). ISBN 0 471 91092 9 £27.50 (271 pages)

Selective neuronal death during development and disease are quite different matters. H.M. Wisniewski in his introduction to this Ciba Foundation symposium writes "the aim of this symposium is to understand the causes and sequence of events which lead to selective neuronal death and to discuss what can be done to prevent or halt the process". Most of the chapters are therefore concerned with pathological neuronal death. The chapters are short and concise and give an excellent view of the clinical aspects of cell death; possible animal models and causes such as transmitter imbalance, errors in DNA repair and neurotoxins. Recent work on excitotoxins has suggested the use of receptor blockers to ameliorate damage following ischaemia. There is also a good account of the analysis of Parkinsonism produced by MPTP which has prompted reappraisal of the condition as well as pointing the way to treatment.

The so-called programmed cell death (apoptosis) of yet undifferentiated neurons during development is clearly very different from pathological cell death. Selective cell death in the development of retinal projections is clearly a mechanism for the refinement of connections, this is not so obvious in the case of death of motoneuron in the developing spinal cord, although in both cases functional interactions play a vital role. There is a very interesting account of the death of motoneurons in the moth when larval muscles are lost during metamorphosis. The development of the sexually dimorphic song nucleus in birds is similarly controlled by hormones and yet again requires functional interactions between cells.

The point at which the clinical development aspects of cell death come together is in the chapters on neurotrophic agents and also in the discussion following each chapter which are an excellent feature of these CIBA foundation symposia.

I suspect that clinicians and biologists will each find useful information in their respective fields in this volume, but it is clear that the dichotomy between pathological and developmental cell death remains.

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#### Junctional Complexes of Epithelial Cells

Eds. G. Bock and S. Clark. Ciba Foundation Symposium 125  
(J. Wiley & Sons, 1987). ISBN 0 471 91091 0. £27.50 (273 pages)

The chapters of this book were contributed by participants at the symposium on junctional complexes of epithelial cells, chaired by Sir Michael Stoker at the CIBA Foundation in February, 1986. The first three articles deal with desmosomes and cover their biochemical composition, interactions with the cytoskeleton and regulated assembly in culture. In



the general discussion that follows there is a useful summary of the different desmosomal components that have been identified, including the names given to them by different laboratories and a diagram of their location within the desmosome. There is also a brief discussion of septate junctions found in invertebrate epithelia. The next section of the book consists of six articles on gap junctions, again covering both structure and regulation. There is a chapter on the role of uvomorulin in occluding junctions and a general discussion section on the composition and barrier function of tight junctions. The third part of the book contains a chapter by Edelman on expression of cell adhesion molecules during morphogenesis; one by Stoker and Gherardi on a recently discovered 'epithelial scatter factor' and one by Weinstein and Pauli, summarizing what is known of abnormalities in intercellular junctions in tumours. The book ends with a general discussion of the functions of different types of junctions.

I recommend this book both to those with a specialist interest in intercellular junctions and to scientists who need reviews of the subject. The discussions following each chapter are particularly valuable and include an update on the controversy surrounding the identity of the gap junction proteins; preliminary studies on the composition of tight junctions; and pulse-chase data on desmosomal protein synthesis. The contributors are all well-known in the field and the list of discussants is impressive. The overall balance of the chapters reflects current research interests and the book has been well edited. At £27.50 it should be possible to persuade your library committees to buy it.

Fiona M. Watt  
Keratinocyte Laboratory  
ICRF.

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#### Embryogenesis in Angiosperms

V. Raghavan (Cambridge University Press, 1986)  
ISBN 0 521 26771 4. £27.50 (303 pages)

Plants are interesting things, ideal for studying many aspects of developmental and cell biology yet, in my experience, most zoology students and many biology students avoid them like the plague. Somehow they are seldom brought alive, nor are their merits clearly stated. I was interested to see if Raghavan's book could redress the balance in some way. It is a clearly written exposition of the basic facts of embryogenesis in higher plants with later chapters that deal with embryogenesis in haploids (from pollen grains), somatic (diploid) embryogenesis (asexual reproduction - a bit like budding in Hydra), and embryogenesis in culture. One of the amazing features of plants covered in detail in the book, is the totipotency of cells derived from "adult" tissues and the ability of such cells to grow into complete plants in a dish. (Just think of the advantages if one could do the same with *Drosophila* or *Xenopus*). The last of the eight chapters is titled "Applied aspects of embryogenesis" and covers some of the economically useful aspects of our knowledge of hybrids, clonal production in culture and breeding haploids.

The chapter on the regulation of gene activity during embryogenesis runs over the scant knowledge available by comparing events in normal

embryogenesis with studies of haploid and somatic embryos. There is no mention of the fascinating homeotic mutations of maize or the transposable elements that won Barbara McClintock her Nobel prize. There is also no mention of cell transformation in higher plants and of the great potential that these methods (available now for monocots and dicots) have for studying the molecular mechanisms of differential gene expression during embryogenesis.

Embryogenesis in Angiosperms is a scholarly work but, unfortunately, one is left slightly dissatisfied. The style is clear but a little bland and there are few illustrations to clarify points and liven up the pages. There are lots of references and the book will be a valuable buy for those already interested in angiosperm embryogenesis. My disappointment is mostly emotional: as one trained as a botanist I want to see a plant developmental biology book that will turn enough chauvinistic zoological heads to make a difference.

Nigel Holder

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#### Introduction to Molecular Embryology (2nd edition)

J. Brachet and H. Alexandre (Springer-Verlag, 1986)  
ISBN 3 540 16968 7. Paperback DM 39 (229 pages).

Now is not the best time to write an introduction to molecular embryology: the field is moving so fast that any such textbook would be out of date before the author receives the proofs. Still less, one would think, is it the time to revise a 13-year-old introduction which itself was based on a book (*Biochemistry of Development*) published almost 30 years ago. And in two respects this fear of dating is justified: balance and accuracy. Both are exemplified in the single paragraph plus one sentence devoted to homeobox-containing genes. Undoubtedly the coverage here is insufficient while the sentence "It (the homeobox) is not found in species in which the embryo does not undergo segmentation (sea urchins, for instance)" contrasts with Holland and Hogan's recent statement in *Nature*: "Antp-like homeo boxes are present in the genomes of arthropods, annelids, molluscs, chordates and echinoderms". This, together with the rather anecdotal style, leads me not to recommend Brachet and Alexandre as a primary developmental biology textbook.

On the other hand, I enjoyed reading the book, because although it does not conform to 'modern' expectations it is of great interest firstly to encounter one man's (Brachet's) thoughts on embryology unencumbered and uncompromised by editors or a string of co-authors (Alexandre, apparently, was only responsible for the chapters on mammals). In addition, the book is a useful reminder of some of the relevant experiments often ignored in modern accounts: the role of *Acetabularia* in coming to understand nuclear-cytoplasmic interactions, for example. I would suggest, then, that the book might make a useful supplementary text to a developmental biology course, with the proviso that many 'fashionable' topics like cell lineage analysis, *Drosophila* segmentation genes and *Caenorhabditis* are conspicuous by their absence.

Jim Smith

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Teratocarcinomas and embryonic stem cells. A practical approach.

Ed. E.J. Robertson (IRL Press, 1987)  
ISBN 1-85221-004-4 Paperback £16 (254 pages).

This is an excellent book. It is well written and beautifully illustrated, packed with useful and practical information, and strikes just the right balance between theoretical background and technical detail. All these are features we have come to expect from the Practical Approach Series published by IRL Press, but this is a particularly impressive volume, and the editor, Elizabeth Robertson, is to be congratulated on putting it together. The book will be absolutely essential reading for anyone using mouse and human embryonal carcinoma (EC) cells as a convenient source of cells with properties of early embryonic tissues (see articles by Damjanov *et al.*, Andrews *et al.*) and of embryonic growth factors (Heath). EC cells are also useful for studying gene regulation during differentiation (Rudnicki and McBurney). Embryonic stem (ES) cells, on the other hand, are much more versatile since they represent an alternative route to microinjection of the fertilized egg for introducing genes into the germ line of mice (Robertson; Bradley). Foreign DNA can be introduced by using retroviral vectors,  $Ca^{2+}$  phosphate precipitation, microinjection or electroporation (Lovell-Badge). One great advantage of the ES cell system is that mutants can be selected before introduction into host blastocysts, and the methodology for doing this selection is very well described (Hooper).

If I am forced to compare this manual with the CSH Manipulating the Mouse Embryo manual I will gladly admit that this one is beautifully illustrated in greater detail, and some of the photographs of surgical procedures are very clear indeed (Vasectomy, on page 145, might present something of a mystery, though!). But the two manuals are really complementary, and there is little overlap in material. Fortunately, the realistic pricing of this one means that you might just be able to afford it from your grant!

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