BSDB NEWSLETTER

No. 17
Spring 1988

Forthcoming BSDB Meetings

As members will know from previous Newsletters, in September this year the Society had intended to run a teaching course entitled 'Brush Up Your Development'. Unfortunately, this clashed with a BSCB meeting entitled 'Differentiation - new perspectives', to be held in Oxford. It seemed likely that many members of the BSDB, as well as participants and lecturers on the course, would want to attend the Oxford meeting. Therefore, in the wider interests of the membership, the Committee felt it best to cancel the teaching course. Thus there is no September BSDB meeting this year, but details of the BSCB meeting, and a booking form, are included elsewhere in this Newsletter. Note that the closing date for applications is 1st July, so don't delay in applying!

---ooOoo---

SPRING 1989

The Spring 1989 Symposium meeting will be held in St. Andrews on April 3rd-6th. The topic is 'The molecular basis of morphogenetic signalling', and the organizers are Rob Kay and Jim Smith, who write:

In the last few years we have had our first glimpses of the molecular mechanisms that might underlie the generation of spatial pattern of cells during development. The heart of the problem is to understand the signalling systems that communicate positional information. We want to know the nature of the molecules (morphogens) that signal between cells or nuclei, the dynamics of the signalling system and how the signals affect the cells. Knowledge of morphogens is coming from work on a number of organisms and from at least two major strategies: molecular genetics (as in Drosophila) and cell biology (as in Xenopus and Dictyostelium). The objective of the meeting is to bring together these different approaches to promote the search for common themes, which we all expect to be present at some levels.

Speakers who have already agreed to attend include: Devreotes (Baltimore), Eichele (Boston), Gelbart (Harvard), Kimble (USA), Lawrence (Cambridge), Lehmann (MIT), Maden (London), Schaller (Tubingen) and Slack (Oxford).

St. Andrews is a beautiful location for a meeting, famous for its golf club and within easy reach of the Scottish Highlands. To make it easier to get there we hope to be able to provide transport from Edinburgh. Graduate students are reminded that travel grants are available from the Treasurer, Mary Bownes (address at back of Newsletter).

---ooOoo---

AUTUMN 1989

The location for the Autumn 1989 meeting has not been decided on, but the topic is likely to be 'Fertilization and Second Messengers', organized by Michael Whittaker.

---ooOoo---

SPRING 1990

The Spring 1990 Symposium meeting will be held in Manchester. The main topic is 'Imprinting' and the organizer is Marilyn Monk.

---ooOoo---

AUTUMN 1990

This meeting is likely to be held in Cambridge, on 'The origins of neuronal specificity'. The organizers will be Roger Keynes and Andrew Lumsden.

---ooOoo---

SPRING 1991

It is probable that the Spring 1991 Symposium meeting will be held in Leeds, with David Hames as local organizer. The topic has not yet been decided on, and suggestions are welcome. They should be sent to the Secretary, Peter Thorogood.

---ooOoo---

Other meetings of interest

Differentiation: New Perspectives.
A special meeting of the British Society for Cell Biology
to be held in Oxford, 20th-23rd September, 1988

The provisional programme is as follows:

Monday, 19th September	Evening	Welcome Reception
Tuesday, 20th September	Morning	Differentiative Decisions E. Davidson (Pasadena) D. Bennett (London) H. Green (Boston) **The ConvaTec Lecturer** R. Schimke (Stanford) R. Horvitz (Boston)
	Afternoon	Differentiation - inducing factors D. Kimelman (San Francisco) J. Smith (London) G. Eichele (Boston) J. Williams (London) M. Raff (London)

	Evening	Keynote Address D. Baltimore (Boston)
Wednesday, 21st September	Morning	In vitro models: G. Ringold (Stanford) E. Fuchs (Chicago) H. Weintraub (Seattle) D. Louvard (Paris) M. Dexter (Manchester)
	Afternoon	Cis- and Trans-acting elements I W. Rutter (San Francisco) **The Delta Lecturer** B. Speigelman (Boston) B. Nadal-Ginard (Boston) N. Rosenthal (Boston)
	Evening	Posters
Thursday, 22nd September	Morning	Cis- and Trans-acting elements II S. Goodbourn (London) R. Tjian (Berkeley) **The Amersham Lecturer** H. Blau (Stanford) C. Emerson (Charlottesville)
	Afternoon	Differentiation and Cancer H. Harris (Oxford) A. Levine (Princeton) M. Greaves (London) W. Bodmer (London) H. Land (London) L. Gudas (Boston)
	Evening	Conference Dinner
Friday, 23rd September	Morning	Transgenic Mice: R. Jaenisch (Boston) H. Westphal (Bethesda) D. Solter (Philadelphia) M. Evans (Cambridge) S. Camper (Philadelphia)

---ooOoo---

THE BIOLOGICAL COUNCIL
4TH ANNUAL SYMPOSIUM ON BIOTECHNOLOGY
"PROTEIN PRODUCTION"

The Exploitation of Microorganisms, Cells and Animals to Make Useful Proteins

To be held at the Edward Lewis Lecture Theatre, University College and Middlesex School of Medicine, Windeyer Building, Cleveland Street, London W1P 6DB on Thursday 15th and Friday 16th December, 1988.

To be organised by Dr. T.J.R. Harris (Celltech Ltd.) and Dr. C.C.G. Hentschel (MRC Collaborative Centre).

Among those who have agreed to speak are:

M. Rosenberg	(Smith Kline & French Laboratories Ltd.)
I. Campbell	(Dept. Biochemistry, Oxford)
J. Errington	(Dept. Microbiology, Oxford)
G. Turner	(Dept. Microbiology, Bristol)
P. Senior	(Delta Biotechnology Ltd., Nottingham)
K. Murray	(Dept. Molecular Biology, Edinburgh)
J.P. Lecoq	(Transgene, Strasbourg)
D.H.L. Bishop	(NERC Institute of Virology, Oxford)
G. Smith	(Dept. Pathology, Cambridge)
A. Smith	(Integrated Genetics, Mass.)
R. Flavell	(P.B.I. Cambridge)
M. Bendig	(MRC Collaborative Centre)
F. Grosveld	(National Institute for Medical Research, Mill Hill)
M. Brown	(Beecham Pharmaceuticals, Epsom)
M. Neuberger	(Lab. Mol. Biology, Cambridge)
J.R. Birch	(Celltech Limited, Slough)
M. Dexter	(Paterson Labs., Manchester)
E. Tomlinson	(Giba-Geigy Pharmaceuticals, Horsham)
N. Stebbing	(I.C.I. plc., Mereside, Cheshire)
P. Seeburg	(Lab. Molecular Neuroendocrinology, Heidelberg)

The Symposium is being sponsored by many societies affiliated to the Biological Council. Registration fee £50 (£30 for students) to include coffee and tea for the two days. Lunch available at cost. ADMISSION WILL BE BY TICKET ONLY. Complete the tear-off slip below for the draft programme and registration form.

.....

TO: Mrs. B. Cavilla, c/o Institute of Biology, 20 Queensbury Place, LONDON SW7 2DZ, U.K.

I am interested in receiving the programme and registration form for the symposium on "Protein Production" to be held on 15th and 16th December, 1988 at the Edward Lewis Lecture Theatre, London. I would like details of accommodation (please tick).

NAME (BLOCK LETTERS).....

ADDRESS (BLOCK LETTERS).....

.....

Chairman's Report

The past year has seen a further onslaught on the independence and funding of higher education and research. History shows us very clearly that an over-riding adherence to a single philosophy in the conduct of educational policy leads to intellectural and creative sterility in the long term. Whilst much was and is wrong in our system of higher education and research, fiscal starvation and market forces are not sufficient to themselves to remedy these deficiencies. We are sorry to have lost to overseas positions so many members of the Society, some distinguished, some of high promise, all badly missed. Market forces and underfunding are leading to disastrous consequences.

If you have not yet tackled your M.P. on the issue of higher education, please do. The pressure that we can exert is out of all proportion to our numbers. Write to your M.P., visit the surgery, invite your M.P. to your laboratory. Our experience in Cambridge is that M.P.s can be turned around. They can get on the D.E.S., who in turn come back to us with concerned enquiries. Put the pressure on. Also take every opportunity to explain to the general public what you are doing and why it is important. Perhaps we have become too complacent and elitist. We use public money and must educate the public into supporting us more. The recent Observer article on research in Drosophila development may have been stylistically over the top, but was educationally bang on target. Let's have a little Xenopus in the Sunday Times, Dictyostelium in the Telegraph and maybe something on birds in the Sun.

The U.G.C. (or their successors) are about to start another Research Selectivity Exercise, and have asked the Society for its views on where the last exercise succeeded and failed. Each Head of Department will have a copy of the relevant papers. Please send to me any comments that you feel the Society should incorporate in its submission, by the end of June at the latest. Our reply will be published in the next Newsletter.

Alas, this year Chris Ford retires as Hon. Secretary. He was catapulted into the post in the confusion of Mike Balls's sudden resignation due to ill health, but fielded all that was thrown at him at a time of increasing activity and financial difficulty. He leaves the Society in excellent organisational shape. We will miss his affable and efficient presence. We will not let him get away entirely unencumbered, however, as Sussex is hosting our teach-in in September 1989! Thanks Chris for all you have done.

We welcome Peter Thorogood as our new Hon. Secretary and, fittingly, our representative on EDBO. Peter led the Southampton team which, on behalf of the BSDB, put together such a magnificent EDBO conference four years ago. We also welcome as new members of the committee Claudio Stern (chickens in Oxford), Jane Davis (flies in Glasgow) and Karen Jaques (Research Student representative from Cambridge).

Our Spring meeting was in Bristol. A delightful city, an extremely interesting well attended meeting and one that was generously funded not only by the Company of Biologists, but also by American Airlines (they are giving us five transatlantic fares so fly them if you can and tell them why - it helps us), Glaxo, Smith, Kline and French, CLIC, Unilever, Flow Laboratories,

Amersham International, JAI Press and Imperial Laboratories. Much of the sponsorship and all of the local organisation was arranged by a friendly and capable team led by Beverley Randle. Our debt of thanks is enormous. The Society's sincerest gratitude to the Bristol team.

Finally, the Company of Biologists, publishers of Development, have supported us generously again this year. They paid for our Symposia on The Y-chromosome, Cranio-facial Development (due out soon), and Segmentation. They, and Development itself, have had an excellent year. Submission rates of papers have mushroomed, quality of production and articles is of the very highest, you get free reprints, colour photos, fast publication, and all the profits are ploughed back into science. We encourage you to submit your best work and to make sure your library subscribes. And remember, you can take a personal subscription very cheaply as a BSDB member (see order form in central pull-out section).

It's been a busy year (meetings in Oxford, Durham, Bath and Bristol), a successful year scientifically and financially, and we hope that the Society can continue over the next year to provide one bright spark in an otherwise rather grim academic environment. Please write and tell us how best to do this.

Martin Johnson
April 1988.

---ooOoo---

Treasurer's Report

The Society is now doing very well. Our membership has been steadily climbing again after an increase in subscription caused a slump, largely due to people forgetting to complete their bankers orders rather than people consciously leaving the Society. Thus our income from subscriptions has increased.

Our income again exceeded our expenditure, partly because we are still expecting a bill for our EDBO subscription and partly because we still receive a lot of royalties from earlier symposia.

Our turnover was also high as we ran successful symposia at Oxford and Bath, both funded by the Company of Biologists.

Since we have reached our target of having a safety net of cash to run the Society, we looked into alternative forms of investment. After various consultations, we decided to stick with "safe" high interest accounts with banks rather than aim for even higher interest rates and capital growth with its associated risks. The stock market crash has made this look a wise decision for the time being. We decided in the Autumn to increase our allocation of travel grants to £2,500 (from £1,000) for the 1988 financial year. The extreme popularity and demand for attending the Bristol meeting meant that I brought this into action rather sooner and this is reflected in the 1987 expenditure which includes about half the travel grants awarded for the Bristol meeting.

The Society officers are now very diligent in ensuring the success of meetings by visiting the venues to discuss progress, meeting with BSCB and attending an EDBO meeting, thus expenditure in this area has increased but we believe this is essential to maintain the high quality of our meetings.

Finally, we have at last bought a computer for the use of the Secretary - so you should find your address changes do not stop you receiving all your valuable information about the BSDB.

The financial statement for 1987 is presented on the next 4 pages.

Mary Bownes
March 1988.

---ooOoo---

Financial Statement for Year 1987

1986	Investments	1987
£		£
4,728.77	National Savings,	7,412.28
1,000.00	Borough of Redbridge (Annual interest to Current a/c)	1,000.00
584.38	Treasury Stock (Annual Interest to Current a/c)	584.38
		£8,996.66
	Accounts	
3,027.13	Current	2,296.63
20,327.75	Deposit	5,937.09
1,808.28	Investment	23,646.13
		£31,879.85
31,476.31	TOTAL ASSETS	£40,876.51
	Represented by:	
	Income	30,989.12
	Expenditure	21,588.92
		9,400.20
	Balance from 1986	31,476.31
		£40,876.51

Income Sheet

Subscriptions	£5,106.38
Mailing Leaflets	229.53
Royal Bank Investment Account	791.18
National Savings Account Interest	538.51
Deposit Account Interest	501.34
Appeal Funds	250.00
C.O.B. Grant	5,300.00
Oxford Symposium	9,762.00
Bath Symposium	5,000.00
Royalties	2,796.67
Treasury Stock Dividend.	68.74
Redbridge Bond	93.08
Tax Rebate	151.69
Refund on Oxford Symposium	400.00
	£30,989.12

Expenditure

Computer	£838.00
Oxford Meeting	5,164.50
Sussex Conference	1,122.01
Officers' expenses (incl. Helsinki EDBO Meeting)	950.00
Audit Fee	40.00
Secretarial Assistance	60.00
Newsletters, photocopying & postage	1,428.96
Biol. Council Handbook	24.75
C.O.B. Devel. Sub. (paid with members' subs.)	25.00
Bank Charges	12.00
Bristol Conference	2,145.00
Bath Conference	6,147.70
Durham Conference	1,908.00
Travel Grants	1,723.00
	£21,588.92

Accounts for 1987 prepared by

M. Bownes on 1st March, 1988.

Signed M Bownes

Audited by L. Moffat and

approved as correct.

Signed L. Moffat

Approved by B.S.D.B. Committee

at meeting on Monday, April 11th

Signed T.H. Johnson

Accepted by A.G.M. on 17th April 1988.

Signed C. Ford

Announcements

DEVELOPMENT

One of the many advantages of membership of the BSDB is a reduced subscription to Development. For just £40 members will receive twelve issues, as well as the proceedings of the Bath Craniofacial Development meeting and the Bristol Segmentation meeting. 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 £40 than to not join and have to pay £55!

---ooOoo---

POSTER PRIZE

A poster prize was awarded at the Bristol Segmentation meeting. The judges were Jack Price and Jim Smith and the prize of £50 went to Chris Chan (Guys) for his poster **Analysis of glial cells in normal and mutant adult rat optic nerve.**

---ooOoo---

ARE YOU OVER 65?

Can we draw the attention of all members of the BSDB who have arrived at 65 years of age that one further annual payment of their membership fee gives them continuing membership for life. If you qualify, please write to Mary Bownes who will make the necessary arrangements.

---ooOoo---

ARE YOU TAKING EARLY RETIREMENT?

Unfortunately too many of us are! The committee are proposing to present a motion at the annual general meeting next spring at St. Andrews to change the constitution to permit members taking early retirement and taking up no other paid position to qualify for free life membership. This motion requires two thirds of those present to vote in its favour. If you wish to have your views expressed at the meeting and cannot be there, can you write to Mary Bownes.

---ooOoo---

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 a booking form for the BSCB Oxford meeting.

DEVELOPMENT

Members of the BSDB are entitled to a reduced subscription to Development. For only £40 you will receive twelve normal issues and 2 casebound supplements. In 1988 the Supplements will be Craniofacial Development (edited by Peter Thorogood and Cheryll Tickle) and Mechanisms of Segmentation (edited by Vernon French, Phil Ingham and Jonathan Cooke).

. . . . . .

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 £40 made payable to the Biochemical Society Book Depot.

Signature:. . . . . .

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

. . . . . .

. . . . . .

Differentiation: New Perspectives
A meeting of the British Society for Cell Biology
Oxford University, 20th - 23rd September, 1988
Registration and Booking Form

Name ..... Sex .....

Address .....

.....

..... Telephone .....

	Sept 19	Sept 20	Sept 21	Sept 22	Sept 23	Totals
Bed & breakfast* (£25)						
Lunch (£5)						
Dinner (£10)						
Conference dinner (£20)**						
Registration fee: £5 BSCB members; £25 non-members						
GRAND TOTAL						

Make cheques payable to 'BSCB Oxford Meeting Account'

*If you would prefer a double room (£18 per person per night) please give name of person you are sharing with.....

** Book early, as seating is limited

Special requirements? (eg vegetarian meals).....

What is your position? Grad. student/ postdoc/staff scientist/.....

Research interests? (5 key words).....

If you wish to present a poster, please enclose abstract (no more than 300 words)

Completed forms and abstracts should be returned before 1st July to:

Dr Fiona M. Watt, Room 602,
Imperial Cancer Research Fund,
P.O. Box 123, Lincoln's Inn Fields,
London WC2A 3PX.

Young BSCB members who wish to apply for an Honor Fell Travel Award should contact Dr Watt.

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: Dr. Peter Thorogood, Department of Biological Sciences, University of Southampton, Bassett Crescent East, Southampton.

For Society's Use

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

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

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

*Delete as applicable.

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

Developmental and Evolutionary Aspects of the Neural Crest

Ed. Paul F.A. Maderson (Wiley, 1987)
ISBN 0 471 81342 7. £65.00 (392 pp)

The editor of this book begins his introductory chapter with a quote from Horstadius who, we are told, considered the neural crest to be "a very peculiar structure." Well so it is, and in more than one sense. It has confounded developmental biologists for years with its ability to migrate to all reaches of the body and generate such a variety of structures. It has also entrapped neurobiologists, thinking that the peripheral nervous system, to which it gives rise must be a 'simpler system' than the intractable vertebrate brain. It is peculiar also, in a different sense, to evolutionary biologists, who find this structure arising uniquely in vertebrates. The strength of the volume under review is that it makes a serious attempt to pull all these strands of research together and present a comprehensive developmental and evolutionary viewpoint on the neural crest.

One advantage of this integrated approach is that whichever background you come to this volume from, you are certain to learn something new. A second advantage, no less significant, is that it neatly steers the authors away from the potential trap of duplicating Nicole LeDouarin's magisterial work, published in 1982. Her book gave a comprehensive description of crest development, particularly of her own extensive work using the chick/quail chimaeric system, and remains the best overall account of crest development. The alternative perspective of this new volume makes it a worthwhile addition.

The book contains 13 chapters, split into three major parts. The first of these sections deals primarily with crest development and the last primarily with evolutionary and comparative anatomical aspects of crest. However, there is some overlap within this framework. In the first section, for instance, Noden's excellent chapter on cephalic crest is primarily developmental but he keeps evolutionary considerations very much to the fore. Also, Lumsden's elegant studies on tooth development find themselves in with the evolutionary lot.

All of the other developmental chapters I found accurate and informative. Given the existence of the LeDouarin book, an extensive reworking of the cell fate information was not required. But some consideration of current theories on crest pluripotentiality and the generation of cell diversity was necessary, and Bagnara's chapter provides this, specifically with reference to pigment cells. With regard to crest migration, both Bronner-Fraser and Erickson have written good, readable accounts that are, however, somewhat overlapping.

This type of overlap seems to be less of a problem among the more evolutionary chapters; there are three chapters by Hall, Thomson and Halstead on the evolution of crest-derived skeletal elements, which seem largely complementary. There is also, by way of an epilogue, a discussion of crest in an evolutionary context from Gans.

The middle section of the book is the least coherent, as you might expect given its general title of 'Recent advances in our knowledge of the neural crest and their relation to the development and organisation of the nervous

system.' The three chapters are not actually about crest at all. One, by Bellairs, talks principally about primitive streak, and a second by Jacobson deals with morphogenesis of axial structures. The third, by Gerson, covers the expression of neurotransmitter phenotype in the enteric nervous system. Incidentally, the Gerson chapter, in a volume that is part of the 'Wiley Series in Neurobiology', is the only one that is actually neurobiological.

In general this book does a good job of pulling together development and evolutionary studies of the neural crest. The majority of chapters and information are readable, and the book is well presented with numerous ilustrations of reasonable quality. The book is not comprehensive, but on the other hand, its chapters are by authors who do know their subject.

Jack Price
Laboratory of
Embryogenesis
NIMR

---ooOoo---

THE MAMMALIAN Y CHROMOSOME:
Molecular Search for the Sex Determining Factor

Eds. P.N. Goodfellow, I.W. Craig, J.C. Smith and J. Wolfe
(Development volume 101 supplement 1987)
ISBN 0 948601 11 6 £35.00 (200 pages)

One of the major questions in developmental biology is: what determines sex? In mammals it is believed that the primary male determining locus is present on the Y chromosome. At the University of Oxford in March 1987 the British Society for Developmental Biology held the first international meeting devoted to the structure and genetics of the Y chromosome. The proceedings of this meeting have been published as The Mammalian Y Chromosome : Molecular Search for the Sex Determining Factor.

The focus of the proceedings was undoubtedly the assingment of the locus for sex determination on the Y chromosome. A clear and comprehensive collection of papers detail how the combined knowledge obtained from three different strategies attained this goal. Firstly, the construction of genetic linkage maps of the Y chromosome: Ferguson-Smith et al describe the use of DNA from patients with Y chromosome aberrations to order Y-specific sequences by deletion mapping, while Pritchard and Goodfellow discuss the generation of somatic cell hybrids, containing Y chromosome fragments, as a source of material for fine structural mapping of this chromosome. Secondly, Weissenbach et al., and Goodfellow et al. (in man) and Burgoyne et al. (in mouse), show how observations on the obligatory pairing and exchange that occurs in the "pseudoautosomal" region at male meiosis allows the ordering of loci within this region, with respect to a gradient of recombination. Thirdly, abnormal X-Y exchange that causes the transfer of the testis determining gene plus a variable amount of Y material onto the X chromosome (generating XX males) has enabled researchers to map sequences near this locus (papers presented by Weissenbach et al., Ferguson-Smith et al. and Muller in man, Bishop et al. in mouse). The scene is now set for walking to the testis determining gene.

The determination of sex is a complex event, involving a cascade of genes

with a "KEY" sex determining gene at the apex. This was clearly demonstrated for nematodes and Drosophila in the elegant studies of Hodgkin, Nothiger and Steinmann-Zwicky. The complexity of the event in mammals is made evident by the range of papers discussing autosomal and Y-linked (excluding the testis determining gene) genes affecting sex determination: de la Chapelle discussed XX males lacking Y derived sequences. Erikson et al. described autosomal loci on mouse chromosome 17 which affect testis determination. Burgoyne and Singh et al. present evidence for Y linked genes involved in spermatogenesis and testis determination in mouse.

An important controversy was laid to rest by Simpson et al. describing the assignment of the male specific transplantation antigen (H-Y), once a contender for the testis determining gene, to a separate location on the Y chromosome. Evidence for the existence of a further, autosomally regulated, serologically detectable, male antigen is presented by Wiberg and Sherer.

The search for the testis determining factor has led to much knowledge on the structure of the Y chromosome, showing it to be a mosaic of X related sequences, autosomal related sequences and Y specific sequences. Indeed this collection of papers enables the reader to picture the structure of the whole Y chromosome. To this end a section is devoted to repeat sequences present on the Y chromosome; in the heterochromatic region on the long arm (Smith et al.); in the region of the centromere (Tyler-Smith) and in the region of the telomere (Cooke).

Thought-provoking clues on the evolution of the sex chromosomes and the divergence of the Y chromsomes in man and mouse are included: the gene for the enzyme steroid sulphatase (Fraser et al.) is "pseudoautosomal" in mouse, but in man is present on the Y chromosome as an inactive gene, implying that a pericentric inversion may have occurred during divergence of the human and mouse Y chromosomes. Avner et al. (in mouse) and Weissenbach et al. (in man) have found X-Y homologous sequences outside of the "pseudoautosomal" region. What does this divulge about the evolution of the sex chromosomes?

In my view, this collection of papers provides a valuable source of information not only on sex determination in mammals but on the structure and function of the whole of the Y chromosome.

Brenda Williams
Laboratory of Embryogenesis
NIMR

---ooOoo---

Lymphokines and Interferons : A practical approach

Ed M.J. Clemens, A.G. Morris and A.J.H. Gearing
(IRL Press, 1987)
ISBN 1 85221 035 4 £22.00 (380 pages)

According to the publisher's blurb "this book is a practical response to the explosion of interest in the fields of interferon and lymphokine research. It brings together techniques in these inter-dependent areas." It is difficult to see the connection. A proper balance has not been struck between the two subjects and lymphokines are a definite afterthought. The interferon contributions are, with some exceptions, of a standard and with the "hands on"

experience expected of the IRL practical approach series. Nevertheless, it is surprising to be introduced to the technology of growth inhibition assays with "a haemocytometer slide is a microscope slide with a calibrated counting grid", or to the immunospeke of ELISA assays: biological activity per se is not measured in immunoassays; they measure immunoreactive mass"!

As for lymphokines, there have been such rapid advances in the understanding of lymphokine properties between the conception and publication of this book, that many of the contributions are out of date. Work with recombinant material (IL1 to IL6) in the past few years has shown that each lymphokine exerts pleiotropic effects on the immune and heamopoietic systems and different lymphokines elicit identical responses from the same target tissues but via distinct receptor-ligand recognition systems. For instance, interferon b2 (a misnomer for a molecule with minimal necrosis factor): it is pyrogenic; it activates murine thymocytes in conventional IL-1 assays (Chapter 15); it elicits release of acute phase proteins from hepatocytes. However, recombinant interferon b2 is now known to be identical with recombinant Il-6, or B-cell stimulatory factor 2 (Chapter 29), a growth factor for B cells. Similarly, eosinophil differentiation factor (Chapter 18) has B-cell growth factor activity in the mouse but not surprisingly in the human. If immunologists are confused by this state of the art, what hope for the cell biologist? A hasty listing of the various biological activities attributed to recombinant cytokines in Appendix II is not enough. I look forward to purchasing a revised edition that includes the recent and exciting developments in lymphokine research.

D.B. Thomas
Division of Immunology
NIMR.

---ooOoo---

Experimental approaches to mammalian embryonic development

Rossant and Pedersen (Cambridge University Press, 1987).
ISBN 0 521 30991 3 £47.50

There is a wide general interest in using the mammalian embryo as an experimental system to examine a broad base of problems related to development. Much of this interest stems from the fact that the long history of research in embryology has provided us with the ability to manipulate the early embryo, generate embryonic cell lines and produce transgenic mice. An ever-increasing number of books relating to the practical aspects of embryo manipulation have appeared, but all too often they do not focus on the general problems or principles underlying the study of mammalian development. This book seeks to fill that gap and provide students and researchers with an outline of cellular, molecular and genetic aspects of research in mammalian development. The chapters deal almost exclusively with the mouse as the experimental system. The book deals very well with the diverse problems of embryology and is a pleasure to read. I believe that it will be appreciated and become a part of the essential basic reading of students and labs trying to come to grips with the field of mammalian embryology. The work suffers somewhat from the fact that the chapters only reference work through part of 1986. This makes some areas, particularly molecular approaches, dated, but

this is a problem of any book of this kind and I feel it will hold up well with time because of its focus on general aspects of embryology. The price seems reasonable and I am sure it will become a part of most embryologists' book shelves.

Robb Krumlauf
Laboratory of Molecular Embryology
NIMR

---ooOoo---

The Sea Urchin Embryo: A developmental biological system

G. Giudice (Springer, 1986)
ISBN 3 540 15353 5 DM 148.

It is surprising that for an island race we in Britain largely neglect marine invertebrates for embryological studies. It is even more surprising in light of a century of extensive research on certain marine invertebrates, in particular, the sea urchin. To realise the importance of this organism in embryology, time would be well spent reading Professor Giudice's latest volume.

He presents a detailed survey of the cellular, molecular and biochemical literature relating to pre-larval sea urchin development. Indeed, the extensive bibliography includes over 2,000 references which cover publications up to 1984 but which excludes more recent advances such as sea urchin transformation techniques. Embryologists working on other systems may be surprised and stimulated by reading this personal account of the early life of the sea urchin.

Andy McMahon
Developmental Biochemistry
NIMR

---ooOoo---

Mammalian Development - A Practical Approach

Ed M. Monk (IRL Press, 1987).
ISBN 1 85221 029X £18.00 (335 pages).

The study of mammalian development is beset with problems. Difficultes arise from the limited material easily available, as well as the inaccessibility of post-implantation stages for experimental manipulation. Thus, in contrast to Drosophila, the "rules" of mammalian development are largely unknown. So why work on mammals? As Anne McLaren says in her forward to the book, the excitement and beaty to be found in the developing embryo and foetus is the driving force for many of us. Thus, it is the goal of the developmental biologist to understand the ontogeny of the organism and in this pursuit we are aided by the timely appearance of "Mammalian Development - A Practical Approach".

This book lives up to its title presenting a genuinely practical approach to studies on the oocyte, egg, embryo and foetus. As with other volumes in this excellent series the chapters are well written, detailed and easy to

follow. Chapters cover: general mouse husbandry - an important consideration for the new researcher; isolation, culture and manipulation of pre- and post-implantation embryos - including nuclear transfer and production of transgenic mice; examination of chromosomes and tissue sections by histological and molecular methods including in situ hybridisation; micro approaches to enzyme activity, protein synthesis and cDNA library construction. The cryogenic storage of oocytes and embryos completes the mouse methods. A final chapter addresses the human embryo and this will serve as a useful appraisal of methodologies in this difficult area.

Some recent advances such as retroviral lineage marking and the interpretation and analysis in three dimensions of in situ data are not included. However, I hope these will appear in Volume 2 of what should be a regular, updated series of as high a quality as this initial volume.

Andy McMahon
Developmental Biochemistry
NIMR

---ooOoo---

Developmental Biology

Virginia Walbot and Nigel Holder
(Random House, 1987)
ISBN 0 394 33736 0. £34.10 (371 pages)

There is a trend amongst recent text books, stimulated by the success of Watson's "Molecular Biology of the Gene" and Alberts et al. "The Molecular Biology of the Cell" to reduce the subject to bite-sized chunks, which explain the subject matter in much the same way as I remember trying to explain the anatomy of the hip joint to an elderly aunt. Walbot & Holder's "Developmental Biology" follows the trend, as evidenced by a contents section that starts:

and which continues for the next 22 pages!

This simplistic style of presentation is the only cavil I have with a book which is interesting, well balanced, and informative. And students will probably flock to buy it for the very simplicity that jars on me!

The advantages of this text over others are its clear readable text style, its wide coverage of development, the references at the end of each chapter, and the plentiful illustrations which, while of not particularly high quality, give life to the text. I liked the idea of a separate section to cover particular species. This allows the authors to extract the examples of developmental phenomena, and underlying cell and molecular biology, that each particular species has provided. However, I cannot imagine why sea-urchins, chickens and amphibians were not included in this section, perhaps at the

expense of the section on molecular biology, which is usually taught in other courses, and is more than adequately covered by Watson's book.

Chris Wylie
Department of Anatomy
St. George's Hospital Medical School

---ooOoo---

Fetal and neonatal growth

(Vol. 5, Wiley series on perinatal practice, 1987). 211 pp.

This volume of collected chapters is from a series aimed at bridging the gap between obstetrics and neonatal medicine. The book is concerned particularly with growth control in the fetus and neonate. It has 10 chapters, most of which pursue physiological aspects of growth, with themes such as the development of enzyme systems in the liver and bone of the neonate, the adaptation of the neonate to extra-uterine nutrition, and control of placental growth. A couple of chapters deal with growth factors and these are the closest to basic science that are found in the collection. It is unlikely to be a book for one's own shelf but it would be a useful acquisition for most libraries, especially those linked to a medical school.

Nigel Holder
Department of Anatomy
King's College.

---ooOoo---

Cytogenetics of mammalian embryonic development

A.P. Dyban & V.S. Baranov
(Clarendon Press, Oxford, 1987) £35.00.

This book is a very useful review of the effects of chromosome imbalance on embryonic development. It will be of considerable use to new entrants into the field, in particular molecular biologists. The book is well written and provides the Western reader with a good insight into the experimental embryology carried out in the Soviet Union. In addition the authors have not limited themselves to discussing previous work but also have put forward their own ideas and theories on various topics which should stimulate useful discussion.

Research carried out in the West is well documented up to 1978 when the Russian edition was published. However, Western publications from 1978 are not fully represented due to the inevitable difficulties the authors had in updating the original Russian version. The points made by the authors in their concluding remarks on the gap between the field of cytogenetics of mammals and molecular biology is already decreasing. For instance, in their last chapter they discuss the functional activity of chromosomes and control mechanisms of early embryonic developments with regard to parental chromosome imprinting. The recent advances using transgenes as molecular probes for genomic imprinting demonstrates the possibilities of determining the role of chromosomal determinants of development.

One error was noted on page 103, line 27: hyperhaploidy should read hypohaploidy.

Carol Griffin
MRC Experimental Embryology
& Teratology Unit
Carshalton

---ooOoo---

DEVELOPMENTAL BIOLOGY : A COMPREHENSIVE SYNTHESIS

Vol. 4 Manipulation of Mammalian Development
Ed R.B.L. Gwatkin (New York: Plenum Press, 1986).
$52.50 (388 pp).

Dr. R. Gwatkin has done an excellent job. He invited many good scientists whose contribution to the problems under discussion is really great. As a result, we have a book which, in addition to covering different ways of manipulation of oocytes and mammalian embryos, addresses some theoretical problems likely to be of particular importance for those who have interest in new ideas and new results in the mammalian development field.

Remarkable advances have been made since the publication of the 5 volume manual on development of mammals edited by M.H. Johnson, and most are described in this book. Thus, Chapter 1 provides a detailed description of gene transfer into mouse embryos. Though many laboratories use transgenic mice as a standard experimental object, and much has been written about this, the reader will find here original approaches and many new data obtained on transgenic mice.

Chapter 2 is written by Drs. McGrath and Solter who were the first to introduce the methods of nucleus transplantation in early mammalian embryos. The authors detail their technique of enucleation of newly fertilized mouse eggs and nuclear introduction. Some other problems where this technique may well be applicable are mentioned too.

Chapter 3 is devoted to mouse oocyte fusion. Only a few laboratories use this technique now. There is, however, no doubt that it can give interesting results and represents a useful tool in the study of nuclear-cytoplasmic relationship in the early mammalian development.

Chapters 4 and 5 cover the problem of in vitro fertilization. In chapter 4 a thorough analysis of the results obtained by in vitro fertilization of the eggs from laboratory and domesticated animals is given, while chapter 5 is devoted to the recent progress in human in vitro fertilization and embryo transfer. The two chapters contain interesting and important information on the problem in question, including the practical aspect, i.e. its application in farm animal breeding and medicine. To my regret, little technical information is given, despite the authors' extensive knowledge of this subject.

Chapter 6 deals with the approaches to sex regulation in mammals, namely pre-fertilization sexing, pre-implantation sexing, and post-implantation sexing in the laboratory and farm animals. One cannot but agree with the

author that knowing the sex of embryos could be economically advantageous. However, if to take into account the total sum of expenses on modern technology, it is hardly possible to expect a great profit.

Chapter 7 is a review on cryopreservation of mammalian eggs and embryos. About 15 years ago Whittingham and Wilmut published their pioneering work describing reliable methods of freezing mouse embryos. During this time embryo cryopreservation came to be a standard procedure not only in the laboratory studies, but in farm animal breeding, and even in research on human embryos. It had a considerable economic effect, and this may be taken as a proof of great validity of all recommendations suggested by the author.

In chapter 8 the reader finds detailed description of the present state of embryo transfer in animals. The introduction of these procedures was a revolution in farm animal breeding, and as a result there sprang the whole embryo transfer industry. I do not dare to judge how much better the commercial application of embryo transfer technique would be in hands of those who have read this chapter. There is a thoroughly selected list of references which the reader will, undoubtedly, find very useful.

Chapters 9 to 13 are devoted to theoretical aspects of mammalian development. In chapter 9, Dr. M.H. Johnson comments on the results obtained in his laboratory concerning the role of cell interactions in generating cell diversity in the early mouse embryo. Even those who know other reviews of this author on the same subject that have been published in recent years will find here new ideas in support of Johnson's polarization hypothesis.

Chapter 10 concentrates on tissue interactions in developing skin, teeth, and related ectodermal derivatives, and chapter 11 on epithelial-mesenchymal interaction in the development of the embryonic mammary gland. Both chapters adequately describe the present state of these far-from-simple problems and contain information useful for those who have interest in new ideas and modern methods in morphogenesis.

Chapters 12 and 13 discuss immunological and immunogenetic approaches to the analysis of mammalian development. These are quite new approaches, and the reader will find many things to attract his or her attention.

On the whole, the book leaves a good impression. It should find a place if not on the scientist's desk, then on the library shlef. It is a source of interesting and helpful information and will remain as such for some years to come.

Professor A.P. Dyban
Institute for Experimental Medicine
Leningrad, USSR.

---ooOoo---

BSDB COMMITTEE MEMBERS

	Tel. No:
Martin Johnson (84-89), Department of Anatomy, University of Cambridge, Downing Street, Cambridge CB2 3DY.	0223 333789 Chairman
Peter Thorogood (87-92), Department of Biology, Medical and Biological Sciences Building, Bassett Crescent East, Southampton SO9 3TU.	0703 559122 Ext 4391 (Office) 4399 (Lab) Secretary
Mary Bownes (84-90) Department of Molecular Biology, University of Edinburgh, King's Buildings, Edinburgh EH9 3JR.	031 667 1081 Ext. 2706 Treasurer
Nigel Holder (86-91), Department of Anatomy, King's College, Strand, London WC2R 2LS.	01 836 5454 Ext. 2626 Meetings Secretary
Jim Smith (86-91), Laboratory of Embryogenesis, National Institute for Medical Research, The Ridgeway, Mill Hill, London NW7 1AA.	01 959 3666 Ext. 2211 Publications Officer
Ms Karen Jaques, Department of Anatomy, University of Cambridge, Cambridge CB2 3DY.	0223 68665 Graduate Representative
Dr. Jane Davies, Department of Genetics, University of Glasgow, Church Street, Glasgow G11 5JS.	041 339 8855
Ken Giles (87-92) Twyford Plant Laboratories, Baltonsborough, Glastonbury, Somerset BA6 8QG.	0458 50576 Ext. 130
David Hames (85-90), Department of Biochemistry, The University, Leeds LS2 9JT.	0532 431751

BSDB COMMITTEE MEMBERS

	Tel. No:
Phil Ingham (87-92), ICRF Developmental Biology Unit, Department of Zoology, South Parks Road, Oxford OX1 3PS.	0865 59977 Ext. 220
Robert Kay (85-90), Laboratory of Molecular Biology, MRC Centre, University Medical School, Hills Road, Cambridge CB2 2QH.	0223 248011
Marilyn Monk (85-90), MRC Mammalian Development Unit, Wolfson House, University College, 4, Stephenson Way, London NW1 2HE.	01-387 9521
Audrey Muggleton-Harris (86-91), MRC Unit of Embryology and Teratology, Woodmansterne Road, Carshalton, Surrey.	01-643 8000 Ext. 243
Dr. C. Stern, Department of Anatomy. University of Oxford, South Parks Road, Oxford OX1 3QX.	0865 58686
Michael Whittaker (87-92), Department of Physiology, University College, Gower Street, London WC1E 6BT.	01-388 9304
Hugh R. Woodland (84-89), Department of Biological Sciences, University of Warwick, Coventry CV4 7AL.	0203 523523

Local Secretaries:

Spring 1989 - St. Andrews	John Tucker, Dept. Zoology and Marine Biology, University of St. Andrews, Fife KY16 9TS. Tel: 0334 76161

BSCB

President	Professor L. Wolpert, Department of Biology as Applied to Medicine, Middlesex Hospital Medical School, Cleveland Street, London W1P 6DB.
Secretary	Dr. N.J. Lane, Department of Zoology, Downing Street, Cambridge CB2 3EJ. Tel: 0223 358717.
Treasurer	Dr. F.M. Watt, Keratinocyte Laboratory, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2A 3PX Tel: 01-242 0200
Meetings Secretary	Dr. Denys Wheatley, Department of Pathology, University of Aberdeen, University Medical Building, Forester Hill, Aberdeen. Tel: 0224 681818

EDBO

President	Professor A. McLaren, University College London, MRC Mammalian Development Unit, Wolfson House, 4, Stephenson Way, London NW1 2HE. Tel: 01-387 7171/9521

DEVELOPMENT

Editor in Chief	Prof. Chris Wylie, Department of Anatomy, St. George's Hospital Medical School, Cranmer Terrace, Tooting, London SW17 ORE. Tel: 01-767 1853