

1979? (#1)

BSDB Symposium 4

The proceedings of the Exeter meeting on "Maternal Effects in Development" have now been published by Cambridge University Press. Members are urged to encourage their libraries to purchase copies. Forms for the purchase of personal copies at discount rate are enclosed. Please remember that royalties from the sale of our symposia are a very important source of revenue for the Society.

1980 (#1, 2)

The 41st meeting of the Society will be held in the Physiological Laboratory, University of Cambridge, from 24-26th March, 1980.

Accommodation will be available at Christ's College. The local Secretary will be Dr. Martin Johnson, Department of Anatomy, Downing Street, Cambridge CB2 3DY (tel. Cambridge (0223) 68665).

The sessions for this meeting will be:

1. Does the lineage of cells play a determinative role in development?
(1 day; Convener: P. Lawrence).
2. Cell contact and interaction in development.
(1 day; Convener: H.M. Johnson).
3. Post-transcriptional control in differentiating systems.
($\frac{1}{2}$ day; Convener: R.T. Hunt).
4. Open papers ($\frac{1}{2}$ day).

The Cambridge Meeting

Although it is not a function of this Newsletter to give post-mortems on the Society's meetings, a note of thanks should definitely be extended to Martin Johnson and co-organizers for a beautifully organized meeting in March. One innovation stands out in the memory which one hopes will become a permanent feature of our meetings - a barrel of beer, served during an evening poster session. A master stroke this, as it forced the more sybaritic members into the same room as the posters.

(ii) Southampton, September 1980.

The Autumn 1980 Meeting of the Society will be held at the University of Southampton from 9th-11th September. This will be the 5th Symposium meeting, on the topic of 'Development in the Nervous System', with a programme arranged by Drs. D.R. Garrod (Southampton) and J.D. Feldman (London).

BSDB Symposium Meeting - September, 1980

The programme and booking form for this symposium accompany this Newsletter. Interested non-members should write to Mike Balls for more of these.

1980 Annual General Meeting

This will be held at 12.30 p.m. on Wednesday, 10th September, at the University of Southampton, during the Symposium Meeting.

Agenda

1. Apologies for absence.
2. Minutes of the 15th Annual General Meeting (circulated).
3. Matters arising from the Minutes.
4. Secretary-treasurer's report.
5. Future meetings.
6. Officers and committees.
7. European Developmental Biology Organization.
8. Any other business.

1981 (#2, 3, 4)

BSDB Warwick Meeting - Spring, 1981

The organizer of the next general meeting at Warwick University is Hugh Woodland. Three major topics have been decided upon:

- (a) The organization of the egg.
- (b) Lampbrush chromosomes.
- (c) Transcription in oocytes, eggs and early embryos.

Members who are interested in contributing to this meeting should contact Hugh Woodland (Dept. of Biology, University of Warwick, Coventry, CU4 7A7).

BSDB Meeting, March 1981

The 43rd Meeting of the Society will be held at the University of Warwick, from 24th - 27th March, 1981. The following summary of plans for this meeting comes from the local organiser, Hugh Woodland:

"The general theme of the meeting will be GENETIC AND CYTOPLASMIC INTERACTIONS IN THE CONTROL OF DEVELOPMENT." Last year the March meeting considered translational control and this year we will move back a step in the central dogma to transcription. The enormous strides enabled by gene manipulation should make this particularly timely. The first session of the meeting will consider Lampbrush chromosome structure and function. Perhaps we will, at last, learn how these structures are establishing the molecular architecture of the egg - or indeed if they are relevant at all! The speakers who will reveal all include Callan, Gall, MacGregor and Scheer. The second session moves on the structure of the egg and the establishment of the first cell differences. The papers are intended to be of a review type, but the organisation of this part is still almost as embryonic as the content. J.C. Gerhart (Berkeley) will review the organisation of the amphibian egg; his results will cause many of us to change our undergraduate lectures, I suspect! The third session will

concern transcription and speakers arranged so far are Gurdon, Flavell, Bird and Roberts. This session will probably spill over into the afternoon, with papers on DNA replication (Harland) and secretion from oocytes (Colman), but it is hoped that there will also be space for open papers. The final session will be on mammalian development and will be organised by David Billington. On one evening it is hoped to hold the inaugural meeting of the "Amphibian Development Group" which will be organised along the lines of the "Drosophila Group". John Gurdon is shouldering the burden of organisation. Finally there will be space for presenting work in the form of posters.

Members wishing to submit papers on related or other topics for oral or poster sessions, should submit titles and brief abstracts (50-75 words) to the meetings secretary: Dr. W.D. Billington, Department of Pathology, The Medical School, University Walk, Bristol, BS8 1TD. (Telephone Bristol 22041, Extension 2970) not later than Friday 12th December, 1980. Please indicate clearly if you wish to present a poster. Alternatively, interested members may contact the local organiser directly.

BSDB Meeting, September, 1981

This will be held at the University of Edinburgh from 9th - 11th September, 1981. Advance notice has come from the local organiser, Dr. Jonathan Bard:

"Subjects for discussion in this meeting will be:-
9th September - DEVELOPMENTAL GENETIC AND MOLECULAR SWITCHES - organised by Dr. Mary Bownes, King's Buildings, Edinburgh University, Edinburgh, EH9 3JT.

10th September - THE PROCESS OF MORPHOGENESIS - organised by Dr. Jonathan Bard, MRC Clinical and Population Cytogenetics Unit, Western General Hospital, Crewe Road, Edinburgh, EH4 2XU.

11th September - DEVELOPMENTAL IMMUNOLOGY - organised by Dr. John Horton, Department of Zoology, University of Durham, Durham, DH1 3LE.

The first day will focus on two aspects: Differential gene expression mainly through the use of recombinant DNA technology, and re-evaluating the use of developmental mutants for understanding normal development.

The second day will be concerned with morphogenesis and will concentrate on the processes by which determinative instructions are carried out by cells as they generate normal structures. There may also be a session on the emergence of organisation within cells.

The final days topic of developmental and comparative immunology reflects the growing awareness of this important topic and we hope this will provide a focus for UK workers in this field to get together. Each session will include both invited and contributed papers.

There will be a poster and exhibition session on the evening of 9th September. We hope that at least one representative of every laboratory attending the meeting will show a poster. To encourage attendance at this session the Society will offer free refreshments and will award a prize for the best post-graduate demonstration. For the conference dinner we expect to organise a Cantonese banquet, and hope this will be both a pleasant change and relatively inexpensive.

Members interested in presenting talks or posters should send titles and abstracts either to the appropriate organiser or to the Meetings Secretary (Dr. W.D. Billington, address above) by the end of January 1981. For those wishing to present posters deadline for titles is February 1981 and abstracts by May 1981. Anyone can bring a poster unannounced but should bring their own abstract.

9th ISDB Congress - Basel, Switzerland - 28th August-1st September, 1981

The BSDB is contributing toward the success of this Congress, by donating £250 toward the expenses of one of the speakers, in memory of our late President, Michael Abercrombie.

At the request of a number of members, I have asked Express Boyd Limited to offer group travel arrangements for Basel and details of their scheme are enclosed. I can vouch for the standard of the service provided by Express Boyd Limited, who offered a scheme to members of the British Society for Cell Biology who attended the 1980 Cell Biology Congress in Berlin. However, I must add that any arrangements made by members with Express Boyd Limited are their private concern; the Society is in no way involved.

In view of the large number of requests likely to be forthcoming, and in view of the considerable support given for members attending the Warwick meeting and needed for those going to Edinburgh, the officers have reluctantly had to decide that the Society will not be able to make any travel awards in connection with the ISDB Congress.

1982 (#2, 4, 5, 6)

1982 University of Sussex:

March 30th-April 2nd

Two-day symposium on Embryology and Evolution; 1½ days of contributed papers on insect morphogenesis and limb development

1982

UNIVERSITY OF SUSSEX (March 30th-April 2nd.)

Symposium: "Development And Evolution" Organized by Brian Goodwin and Nigel Holder.

General Session 1: "Limb Development" (Dick Hinchliffe) and "Regeneration" (Hugh Wallace).

General Session 2: "Insect Morphogenesis" (Robert Whittle and Vernon French).

(1) SUSSEX MEETING, MARCH 1982

The 45th meeting of the society will be held at the University of Sussex from Wednesday 31st. March to Friday 2nd April 1982. It will contain the 6th. BSDB Symposium, entitled "DEVELOPMENT AND EVOLUTION", and two parallel general sessions of contributed papers.

Symposium Outline (from the local organizers, Brian Goodwin and Nigel Holder)

"If early staged embryos of assorted mammals are placed together in a dish; only an expert can tell them apart. The limb of an axolotl and that of a human have striking similarities, even though the former evolved about 300 million years before us. These observations, linking the studies of development and evolution, have fascinated biologists since the time of Haeckel, Owen, and Darwin; and have generated innumerable articles, theses, and books over the intervening 100 years or so.

Are we any nearer understanding the links between developmental processes and evolutionary possibilities in the 1980s than were the classical zoologists of the last century ? Come to this symposium and find out !

The programme of speakers is outlined below, and includes 16 people with a wide range of views on such topics as cladistics, binary codes, and gene switching during development. These views will be discussed with reference to numerous experimental systems and evolutionary groups from Protozoa to insects, and from amphibians to higher plants.

Those who followed the debate on evolutionary theory in Nature earlier this year (it ran to over 30 letters and 4 editorials, and provided much strong comment, and enough jibes and innuendo for the script of a Marks brothers film- or should that be Marx ?) will anticipate a very lively and informative meeting.

Speakers: S.J. Gould (Harvard), J. Maynard-Smith (Sussex), L. Wolpert (London), C. Patterson (London), B.C. Goodwin (Sussex), R. Hinchliffe (Aberystwyth), P.D. Nieuwkoop (Utrecht), J. Frankel (Iowa), K. Sander (Freiberg), V. French (Edinburgh), S. Kauffman (Philadelphia), A. Garcia-Bellido (Madrid), V. Walbot (Stanford), B. Hall (Halifax), M. Maden (London), N. Holder (London).

1982

St. George's Hospital Medical School, London:

August 30th-September 3rd

Symposium on Germ Cells; plus sessions on mammalian development and one other topic

BSDB Symposium, London, 1982

At the Society's Symposium in Southampton this September, the Committee decided that sixth BSDB Symposium should be organised Drs. Anne McLaren and Chris Wylie under the title THE DEVELOPMENT OF THE GERM LINE. The Symposium will be held in London at St. George's Hospital Medical School, in September 1982. An outline plan of the Symposium and call for papers will be included in the next Newsletter. Meanwhile, suggestions from members would be most welcome.

St. GEORGE'S HOSPITAL MEDICAL SCHOOL, LONDON

September 6th.-10th 1981

Symposium: "Germ Cell Differentiation" Organized by Anne McLaren and Chris Wylie.

General Session 1: "Mammalian Development" (Martin Johnson) and "Teratomas" (Chris Graham)

General Session 2: "Developmental Neurobiology" (Michael Gaze).

(II) St. GEORGE'S HOSPITAL MEDICAL SCHOOL (September 6th.-10th. 1981)

7th. BSDB Symposium: "GERM CELL DIFFERENTIATION" Organized by Anne McLaren and C.C. Wylie

This symposium comes at a particularly opportune time. The germ line is perhaps unique in the body, because of its totipotency, combined with the extraordinary degree of differentiation required for its specialised function.

During their long and complex differentiation, germ cells display a wide variety of behaviour, of great interest to an equally diverse group of biologists, who study the cellular mechanisms of such phenomena as:

Determination in the early embryo

Directed cell movement and invasiveness

Cell interactions in the early gonad, whereby, among other things, germ cell sex is determined.

Later interactions between germ cells and somatic cells, leading to maturation of the gametes.

The synthesis of informational molecules, which may play a role in cell determination in the next generation,

Furthermore, due to their large size, oocytes can be used as living test tubes in the study of the control of transcription and translation; and tumours derived from the germ-line may also provide insights into the mechanisms of cell differentiation. We would like to bring together representatives from all these groups, to discuss each in the overall context of the germ cell lineage.

The following major sessions have now been organized:

(1) DETERMINATION OF THE GERM CELL LINEAGE, Convener: Tony Mahowald (Indiana)

(2) MIGRATION OF EARLY GERM CELLS, Convener: Chris Wylie (London)

- (3) TUMOURS OF THE GERM LINE, Convener: Chris Graham (Oxford)
- (4) INTERACTIONS IN THE EARLY GONAD, Convener: Anne McLaren (London)
- (5) OOCYTE MATURATION, Convener: Bob Moor (Cambridge)
- (6) THE OOCYTE AND DEVELOPMENTAL CONTROL MECHANISMS, Convener: John Gurdon (Cambridge)

Each of these sessions will contain THREE INVITED PAPERS for publication in the BSDB Symposium series, as well as several SHORT CONTRIBUTED PAPERS. If you would like to contribute a paper (or a poster) related to any of the above topics, then contact the Symposium organizers NOW, so that sessions can be planned well in advance. Posters will be very welcome. Contributions from graduate students even more so.

The Symposium will be followed by two parallel sessions of contributed papers on "MAMMALIAN DEVELOPMENT AND TERATOCARCINOMAS" (Organized by Martin Johnson and Chris Graham) and "DEVELOPMENTAL NEUROBIOLOGY" (Organized by Michael Gaze. Anyone wishing to present a paper or a poster to this part of the meeting should contact the Meetings Secretary, Mike Snow (address given above).

SEPTEMBER 6TH - 10th 1982 St. George's Hospital Medical school, London

- 1) 7th. Symposium of the BSDB : "Current problems in germ cell differentiation" organised by C.C. Wylie & Anne McLaren.

Provisional Programme

Tuesday 7th. September

"The establishment of the germ line" (Convenor: A.P. Mahowald)
A.P. Mahowald (Indiana)
L.D. Smith (Purdue)
E.M. Eddy (Seattle)

"The formation of the gonad" (Convenor: C.C. Wylie)
Janet Heasman (London)
Marjorie England (Leicester)
M.H.L. Snow (London)

Wednesday 8th. September

"Tumours of the germ line" (Convenor: C.F. Graham)
M.J. Evans (Cambridge)
P.L. Stern (Oxford)
R.A.J. McIlhinney (Sutton)

"Interactions in the early gonad" (Convenor: Anne McLaren)
Judith Kimble (Cambridge)
A. Jost (Paris)
Anne-Grete Byskov (Copenhagen)
Anne McLaren (London)

Thursday 9th. September

"Functional Interactions between germ cells and somatic cells" (Convenor: R.M. Moor)
Mary Bownes (Edinburgh)
R.M. Moor (Cambridge)
R.A. Wallace (Florida)

"Gene expression in oocytes in relation to embryonic development"
(Convenor: J.B. Gurdon)

H.R. Woodland (Warwick)
E.M. de Robertis (Basle)
P. Hausen (Tubingen)
Y. Masui (Toronto)

- 2) Ordinary meeting of the BSDB, Thursday 9th. - Friday 10th September.
Parallel sessions of contributed papers on:

"Mammalian development and teratomas" Organised by M.H. Johnson
and C.F. Graham.

"Molecular biology of the oocyte" Organised by Ron Laskey and
Alan Colman.

Members are invited to contribute both papers and posters either in the
ordinary meeting, or in the symposium sessions, whichever is the more relevant.
ABSTRACTS should be sent to the meetings secretary : Mike Snow, MRC
Mammalian Development Unit, Wolfson House, 4 Stephenson Way, LONDON NW1 2HE
to arrive not later than 18th June.
There will be a large combined social and poster session at this meeting.
Contributions on any topic are welcomed. Abstracts should be sent to Mike
Snow. Prize(s) will be awarded for the best graduate student posters.

(III) XVth. EDBO INTERNATIONAL EMBRYOLOGY
CONFERENCE

Organized by the SFBD, under
the auspices of the Parliamentary
Assembly Of The European
Community.

STRASBOURG, FRANCE
21st - 25th. June
1982

(A) PLENARY LECTURES

Hot Points In Differentiation

W.C. Gehring (Basel) No title yet.
L.G. Lathja (Manchester) "Stem cells and their properties"
E. Scarano (Naples) "Enzymatic modification of DNA and embryonic
differentiation revised"
M.A. Weiss (Gif-Sur-Yvette) "Expression of the albumin gene in cell lines
of hepatic origin"
H. Meinhard (Tubingen) "Pattern Formation"

Extracellular Matrix

H.V. Slavkin (Los Angeles) "Role of extracellular matrix in determination
and differentiation"

- K. Von der Mark (Munich) "Role of extracellular matrix in cartilage and muscle differentiation"
- J. Thesleff (Helsinki) "Role of extracellular matrix in morphogenesis and cell differentiation"
- P. Sengel (Grenoble) "Extracellular matrix and differentiation of skin appendages"
- B.S. Spooner (Kansas) No title yet
- J-P. Thiery (Nogent-Sur-Marne) "Molecular mechanisms of cell migration and homing during embryogenesis"
- A.S.G. Curtis (Glasgow) "The role of tension in the control of cell division"

Natural And Experimental Reconstitution In Multicellular Organisms.

- G. Fahl (Frankfurt) "Mechanisms of normal and abnormal regeneration in plants"
- L. Strange (Kassel) "Regeneration in lower plants"
- H.W. Kohlenbach (Frankfurt) "Regeneration of higher plants via somatic embryogenesis in cell and tissue culture"
- M. Bopp (Heidleberg) No title yet.
- Thouveny (Marseille) "Histogenic and morphogenetic programming in annelid regeneration"
- Boilly (Lille) "Positional information in the metazoans"
- Le Moigne (Creteil) "Neurotransmitters, cell proliferation and differentiation during planarian regeneration"

(B) ROUND TABLE DISCUSSIONS, Topics include:

Mechanisms of gonadal sex differentiation in the vertebrates (Chairman A. Jost, Paris)

Regulation et cellules germinales (Chairman L. Gomot)

Regeneration (Chairman M. Bopp)

Ethics and developmental biology

Other "Round Tables" or lectures will be organized in relation to subjects of general interest appearing in submitted poster abstracts.

Contributions would be particularly welcome on the subjects of cytoskeleton,

cell membrane, cell wall, asymmetric growth of homotypic organs, cell shape and proliferation, cell death.

Abstracts of posters should be submitted to:

EDBO Conference

Palais De Congress

F-67082 Strasbourg Cedex , France.

Type abstracts in a 16cm x 12cm space please, and send in before December 1981 if possible. The final programme of the meeting can be obtained by application to the above address after January 1982.

1983 (#4, 5, 6, 8)

1983 University of Nottingham
 April 19th-22nd
 Symposium on Metamorphosis, plus
 sessions on developmental and
 comparative immunology and (to
 be confirmed) a meeting of the
 Amphibian Gene Expression Group

1983

UNIVERSITY OF NOTTINGHAM (April 19th-22nd. 1983)

Symposium: "Metamorphosis" Organized by Michael Balls.

General Session 1: "Molecular Biology Of Development" (Ron Laskey)

General Session 2: "Developmental Immunology" (John Horton and Michael Balls)

1983

University College of Wales at
 Aberystwyth:

Joint meeting with the British
 Society for Cell Biology

Topics currently under
 discussion

APRIL 19TH - 22nd 1983 NOTTINGHAM UNIVERSITY

Symposium 8 : "Metamorphosis" (2 days)

Symposium 9 : "History of embryology" (2 days)

Ordinary meeting : 1) Steroid receptors/gene action
 2) Developmental Immunobiology

Meeting of the "amphibian workshop"

UNIVERSITY COLLEGE OF ABERYSTWYTH (September)

Joint meeting with the British Society Of Cell Biology. Topics will include
 "Matrices and cell differentiation" and "Aspects of cell surfaces". Organizers
 will be Dick Hinchliffe (BSDB) and Richard Kemp (BSCB).

SEPTEMBER 13th - 16th. ABERYSTWYTH

Joint meeting with BSCB. Major topics will include: cell surfaces,
 cell matrices. Proposed associated sessions include: cell death,
 lysosomes, cell movement, limb development, cellular basis of
 morphogenesis.

1983 - BSDB/BSCB Joint Meeting at University of Aberystwyth

September 14th - 17th

Wednesday 14th September "Matrices & Differentiation"
Thursday 15th September am "Matrices & Differentiation"
pm "Aspects of the Cell Surface
and its Junctions"
Friday 16th September am a) "Cell Surface" cont.
b) "Limb Development"
pm a) Contributed papers
b) "Limb Development/Cell Death
in Development"
Evening POSTERS
Saturday 17th September am a) Contributed Papers
b) "Cell Death in Development"

The organisers have put together an excellent list of speakers provisionally:-

"Matrices & Differentiation" G. Cook (U.K.), T. Hardingham (U.K.)
K. Yamada (Bethesda), Takeichi (Kyoto), V. Ruch (Strasbourg),
J-P Thiery (CNRS), P. Sengel/M. Kierney (Grenoble), Ku Kuoyan
(Shanghai), B. Hall (Halifax), J. Lash (Philadelphia), E. Courtois
(Paris), E. Moczar (Creteil), J. Wartiovaara (Helsinki), J. Couchman
(Bedford), K. Von der Mark (Munich), P. Thorogood (Southampton),
E.D. Hay (Boston).

"Cell Surface" M. Raff (London), J. Weiss (Buffalo), R. Kemp
(Aberystwyth), B.M. Jones (Aberystwyth), P. Armstrong (Davis),
K.V. Rao (Delhi), M.J. Dunn (London), W.H. Evans (London), W. Muller
(Mainz), A. Curtis (Glasgow), J. Pitts (Glasgow), Anne Warner
(London), J. Overton (Chicago).

"Limb Development" J. McCabe (Tennessee), L. Iten (Purdue),
P. Maderson (NY), M. Solursh (Iowa), L. Honig (California),
M. Maden (Mill Hill), D. Summerbell (Mill Hill), C. Gribbin (Mill
Hill), D. Edge (Glasgow), N. Holder (London), D. Wilson (London),
J. Slack (London), J. McLachlan (Oxford), T. Horder (Oxford),
H. Wallace (Birmingham), B. Yallup (Aberystwyth), R. Hinchliffe
(Aberystwyth), R. Griffiths (Aberystwyth), O. Flint (Macclesfield),
J. Smith (London).

"Cell Death" E. Kaprio (Helsinki), J. Hurle (Santander),
A. Raynaud (Toulouse), J. Fallon (Wisconsin), R. Lockshin
(NY), A. Wyllie (Edinburgh), I. Bowen (Cardiff), M. Snow (London),
P. Farthing (Bath).

MEMBERS: are invited to contribute both papers and posters.
abstracts should be sent to the Meetings Secretary:-
Mike Snow, MRC Mammalian Development Unit, Wolfson House,
4 Stephenson Way, London, NW1 2HE. Abstracts should arrive no
later than 31st June, 1983. There will be a combined social and
poster session at this meeting. Contributions on any topic are
welcomed. A prize will be awarded for the best graduate student
poster.

1984 (#4, 5, 6, 8)

1984 University of Stirling
(to be confirmed)

----- This plan seems not to have implemented -----

(I) BSDB MEETINGS

Change In Format

There are currently two meetings of our society each year. The committee have suggested that in future, these should have two components:

- a) A two-day Symposium
- b) 1½-2 days of mostly contributed papers; not necessarily related to the symposium topic.

It is envisaged that the contributed paper sessions will run as at least two parallel sessions on unrelated topics, and that each of these will be headed by a plenary lecture which will be timetabled so that all meeting participants can attend. These plenary lectures will lay a foundation for the ensuing contributed paper sessions. Organizers of these parallel sessions will have an allocation of funds from the society (currently envisaged as around £400) to help defray costs of speakers. Below are outlines of forthcoming BSDB meetings already planned in this way. This Newsletter calls again for suggestions and volunteers for further topics, for coverage by symposium or short-paper treatment. Hopefully, we can cater for all subjects, large or small, which are of interest to members. Please communicate such interests to the Meetings Secretary, or to the nearest Committee Member (see last page of Newsletter for addresses).

UNIVERSITY OF LEICESTER (Spring)

Topics not yet decided. Suggestions would be very welcome.

MARCH/APRIL 1984 UNIVERSITY OF LEICESTER

Molecular biology of the chromosome (to be confirmed)
Developmental neurobiology
Development and/or molecular biology of insects.

1984 - BSDB Symposium Meeting at University of Leicester

April 2nd - 6th

10th BSDB Symposium "Genes & Chromosomes in Programmed Development"

Organised by Alma Swan & Herbert MacGregor

The 10th Symposium of the BSDB is designed to mark the turning point at which Developmental Biology finds itself in the 1980s. The search is on for answers at the molecular level to questions about simple ubiquitous developmental events. What is emerging is that many of the more mysterious and complex events and patterns of development are mathematically and formally inevitable consequences of much simpler events that happened long before.

The breakthrough has been facilitated by major technological advances in three areas: first, chromosome microtechnique, which reveals the significance of chromosome structure, arrangement and behaviour in relation to developmental processes; second, recombinant DNA and associated procedures, which provide a new range of sharp and incisive tools with which we can probe developmental complexities at the cellular level; and third, the introduction of computer technology for examining events in embryos, which is producing some truly amazing results.

The Symposium will focus on the role of chromosomes and the karyo type in relation to major developmental shifts, the nature of simple gene expression programmes for specific developmental events, and the usefulness of computer technology for identifying and investigating events which would seem to be truly "epigenetic". It will draw together some of the best investigators and communicators in the field, and should be a lively and exciting occasion.

The speakers will include M. Bennett (Cambridge), U. Müller (Freiburg), A. Bird (Edinburgh), H. Horwitz (MIT), T. Hunt (Cambridge), W. Brammar (Leicester), A. Trewavas (Edinburgh), J. Ellis (Warwick), G. Oster (Berkeley), R. Ransom (Open University), H. Meinhardt (Tübingen), J. White (Cambridge), R. Matela (Open University), J. Slack (Mill Hill), and Herbert Macgregor (Leicester).