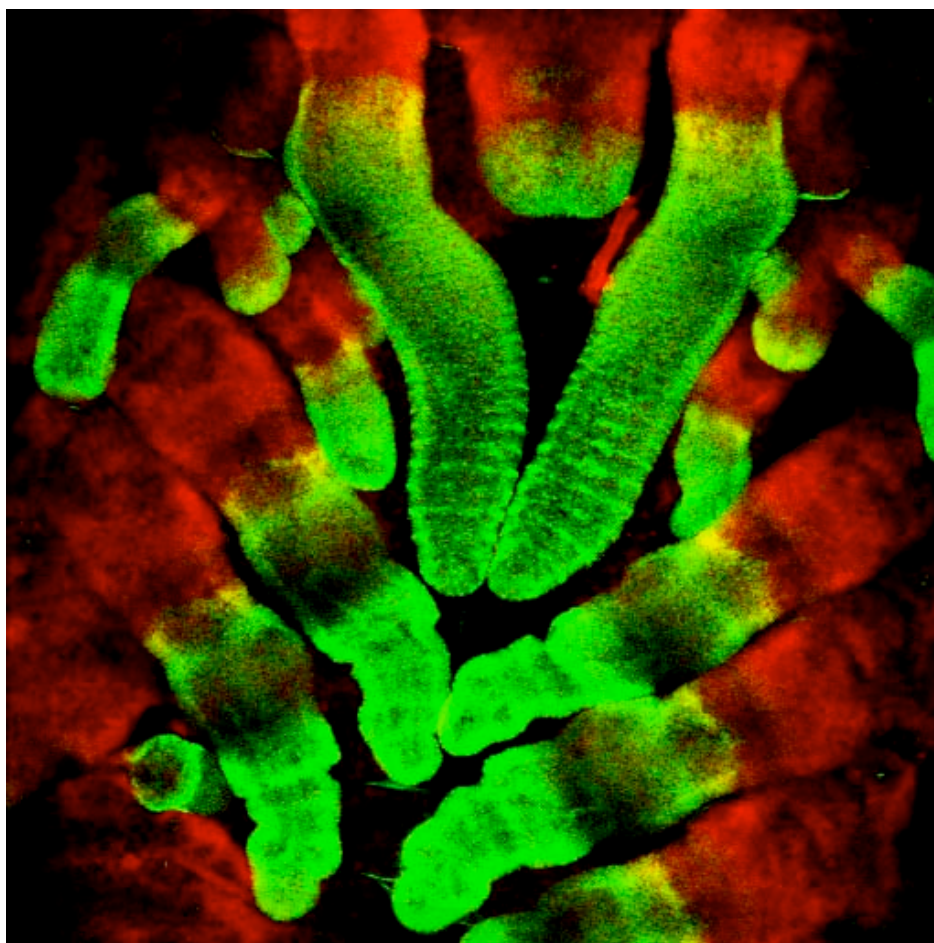


BSDB Newsletter

British Society for Developmental Biology

www.bsdb.org

Winter 2010
Vol. 31, No. 2



**The BSDB annual
Spring Meeting
2011
University of Kent,
Canterbury**

Also in this issue:

- Obituary: Robert Whittle
- News from the Node
- A report on attending the Woods Hole "Embryology course"

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We make it visible.

Editorial

As I take over from the previous publications officer, Andrew Jarman, I would like to thank him for all the work he put in to producing the Newsletter and maintaining the website. He did a tremendous job and I am just beginning to understand how much effort he put into it.

Looking to the future, we want to explore new ways of communicating relevant information to the membership. Print media is becoming an increasingly outdated format. It has been some years now since the BSDB Newsletter was sent out as a hard copy to all the membership. (We might console ourselves that some corner of the globe has a few more trees

on it than it may otherwise have done.) The Newsletter is emailed as a PDF to all member twice a year and is available to download from the BSDB website. I expect that the Newsletter in PDF format will be around for some time to come. In the future, however, we hope to explore new ways to communicate items of interest to the Developmental biology community in ways that are more rapid and interactive than a biannual newsletter.

As ever, we welcome new ideas from BSDB members on how we can best serve you and advance the broad spectrum of Developmental Biology study in the UK

Malcolm Logan,

mlogan@nimr.mrc.ac.uk

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Help us spread the word

Please print out a copy of this newsletter and leave it in a strategic place, such as your coffee room or staff room.

Cover image

Ventral view of a cockroach embryo (*Periplaneta Americana*) stained for Dll (green) and exd (red) proteins in the appendages. (J-P Couso)



From the Chair



I closed my last letter pondering the prospect of the impending government comprehensive spending review and likely negative impact it could have on the academic community, and encouraged everyone to lobby hard to prevent major cuts to the science and education budgets. As we now know the outcome was a “good news unfolding into less good news” situation. There was an outstanding community effort in voicing the importance of science and innovation to the country, including the Science is Vital Campaign which was endorsed by over 33, 000 of us, many of whom also attended the rally in Whitehall, plus I gather there were many high level “behind the scenes” discussions with Government officials. This collective effort resulted in the good news that the Government had ring-fenced the science funding and university research funding budgets. While this was the best imaginable scenario and one that attests to the importance that scientific research is perceived to hold for our future, it still amounts to a 10% cut in real terms. Moreover, with the subsequent announcement on December 20th of cuts of 40% plus to the capital spending budgets, it is now inevitable, given existing commitments, that the amounts available for research grants will be considerably below that of previous years. Further dismal news for the University-based research community was the announcement of a 6-8% reduction in the teaching grant the Government will provide to Universities in 2011, to be followed by a further 16% cut in 2012. The Universities are supposed to absorb these by a combination of “efficiency savings” (i.e. hiring freezes and voluntary redundancies) and implementation of the recommendations contained in the Browne report on England’s Higher Education system. As many of you know the report concluded Universities should be allowed to substantially raise student tuition fees to offset the loss of Government income. With remarkably little Parliamentary time allowed for discussion of these complex and radical reforms, and in spite of the large number of country-wide student demonstrations in the few run-up weeks, the Bill was passed in short

order on December 9th. The unseemly haste with which the Coalition government “voted for change” was very disquieting and those of us embedded in Universities wait uneasily for the fallout from the HEFCE cuts plus reduced grant income. The obvious question for the future is how the Government is going to approach long term science strategy? It is clear there needs to be a productive dialogue with Government to hold in check any further erosion of the UK science base.

However, not everything was bleak in these last few months. There was recognition of the contribution of developmental biology to our understanding of fundamental biological processes with the Award of the 2010 Jeantet Prize for Medicine to Austin Smith for his work on the mechanism of pluripotency – this on the heels of last year’s Lasker Prize to John Gurdon and Shinya Yamanaka for cell reprogramming. Epigenetics and genome wide chromatin organization have continued to dominate as a major theme in the high impact factor journals. (At least the antibody companies can look forward to another good year.) As always, however, the developmental biology journals continue to publish an excellent showing of rather smaller-scale but equally insightful science. In light of the reduced grant income clearly our focus needs to be on devising clever experiments and using our model organisms to their best advantage. Finally, for those of you who might not have noticed, the recent announcement from the Palace sees the BSCB/BSDB Spring meeting (April 27-30 2011) going head-to head with the Royal Wedding! No contest - what we might lack in pageantry will be made up for by our Medal lectures, a stellar programme and the chance to catch-up with each others science over posters and drinks, so I hope to see everyone at Kent.

Liz Robertson

“there needs to be a productive dialogue with Government to hold in check any further erosion of the UK science base”



News from The Node

In the previous BSDb newsletter we announced the launch of the Node, a community website for developmental biologists (<http://thenode.biologists.com>). After the virtual launch, we also had a launch party at the Gurdon Institute in Cambridge in July, to show off the (at that time) new site to the labs there.

Since then, the Node has attracted writers and readers from around the world, and covered a wide range of topics. We've seen reports from graduate students who spent time in international research labs, posts about interesting papers or videos, and people sharing information about useful resources for research or for teaching developmental biology. The Node has also featured some lively discussions, about topics such as supplementary material in journals or about career expectations for postdocs and PhD students. The latter is a topic that we'll get back to in more detail over the coming months.

We'd like to emphasize that you don't need to ask permission to write for the Node. You just need to sign up, and within a few days (after we've seen your account) you'll get access to all the technical features you need to post on the site. You don't need to wait for us to ask you to write something - although we might! The great thing about the Node is that you can instantly share your thoughts on the latest research, tell us about that side project you're working on, show a beautiful developmental biology video you came across, update people on a meeting you attended, recruit a new lab member, or anything else you think other developmental biologists might be interested in. And if you can't get enough and would like to contribute regularly to the site, that's even better! You can write as many times as you want.

Over the past months, we've had a lot of feedback from people about the site, and I'm glad to report that most of it was positive. My personal favourite "feedback" was noticing two people take each other's photos in front of our 7-foot banner at a meeting. We have fans! Other people have told us what kind of content they'd like to see on the Node. We try to accommodate these requests, but ultimately you are all in control of what content appears on the site, and if you have a good idea, just post it to the site. There's another extremely simple way to let us know what you think of the Node: by clicking the thumbs up and thumbs down images underneath the posts and comments. This takes less than a second, and you don't need an account to voice your opinion this way.

Finally, we'd explicitly like to invite societies, such as the BSDb, to use the Node to share news from their local community with the rest of the world, and to reach out to our global readership. Other than news, we also welcome event notifications: The Node's events page has the most complete listing of developmental biology meetings worldwide, and with your help we can find even more workshops and conferences to add to the list.

Hope to see you around on the Node. Whether you're writing a post, leaving a comment, or just reading (and clicking the thumbs icons, of course!) we're happy to have you join the online developmental biology community.

*Eva Amsen
Community Manager for the Node
and Online Editor at Development*

*Visit:
<http://thenode.biologists.com/>*

"..we invite societies, such as the BSDb, to use the Node to share news from their local community with the rest of the world, and to reach out to our global readership.."

The Node



Financial report

“the society provided 74 BSDB grants to help people attend BSDB meetings (total value £25910) and 96 Company of Biologists/BSDB travel grants (total value £25860) to enable scientists to attend overseas meetings and training courses”

Are you paying your fair share?

We still have a ‘hard core’ of members who are paying less than they should.

Please check your standing order today and update if necessary!

In the last financial year (1 August 2009–31 July 2010) the society has seen a significant improvement in its financial situation while maintaining its core business of supporting excellent meetings in developmental biology and enabling many junior scientists to gain experience in developmental biology.

In the last year the society provided 74 BSDB grants to help people attend BSDB meetings (total value £25910) and 96 Company of Biologists/BSDB travel grants (total value £25860) to enable scientists to attend overseas meetings and training courses, as well as support for a number of smaller developmental biology meetings (£1700). The amounts given out were slightly lower than budgeted, reflecting both a lower take up of applications for the Autumn 2010 meeting and a lower rate of application in the autumn of 2009 for CoB awards. This probably reflects the success of the ISDB meeting in Edinburgh, i.e., many people saw this as the major meeting of last year and did not want to travel (or did not have the financial reserves) to attend other meetings. The application rate for CoB awards has now returned to a healthy level and CoB have very kindly allowed us to transfer the small under payout (c. £1.5K) to the following year’s budget.

With respect to the two main meetings that the BSDB was involved in (ISDB 2009, BSDB/BSCB Spring meeting

Warwick 2010), both were financially successful. We are still awaiting the final balance on the Warwick meeting, but the ISDB meeting led to a final surplus to the society of over £70K. This is obviously an excellent outcome for the society and I would (again) like to acknowledge the hard work of all those involved in organizing this meeting, especially Mathew Freeman, Guy Tear and Nancy Papalopulu. The surplus provides a vital bedrock for the Society as we move into a potentially difficult financial environment for academic research over of the next few years. Combined with the increase in value of the Society’s investments, the BSDB is in a good financial position.

With respect to other items on the budget, we are (as ever) deeply thankful to the Company of Biologists. In addition to providing a generous amount for the CoB/BSDB travel grants, they also provide a healthy contribution to the BSDB which (together with the members’ subscriptions) allows the Society to function. With respect to costs, on average the total administration and committee costs involved in running the society remain reasonable, representing less than 3% of turnover. Finally, we have recently achieved on-line banking, and this will make the task of tracking payments and membership more effective.

Andrew Fleming

BSDB treasurer

Payment option for overseas members



It is possible to pay your subscription by PayPal. This facility is primarily aimed at our overseas members and we do not encourage other members to use this route as it causes us certain problems when it comes to renewal of subscriptions. For those who need to use it, the process is fairly painless and full instructions can be found on our webpage.

<http://www.bms.ed.ac.uk/services/webpace/bsdb/BSDBpaypal.htm>



BRITISH SOCIETY FOR DEVELOPMENTAL BIOLOGY**PROVISIONAL FINANCIAL STATEMENT YEAR ENDING JULY 31st 2010****Accruals Basis****Balance Sheet**

<u>2008/09</u>		<u>2009/10</u>
<u>£</u>		<u>£</u>
<u>126,878</u>	Investments	<u>156,335</u>
	Baillie Gifford Managed Fund	
	Current Assets	
11,203	Barclays Bank High Interest Account (1)	91208.92
22,154	Barclays Bank Current Account	27,331
3,051	Barclays Bank: Louie Hamilton Account (1,2)	3,052
36,408		121,592
5,380	Less: Unpresented cheques 09-10	10,423
15,058	Debtors – Creditors	385
<u>46,086</u>	Net Current Assets	<u>111,554</u>
<u>172,964</u>	Total Funds	<u>267,889</u>

Income & Expenditure Account

<u>Income</u>	<u>£</u>	<u>Expenditure</u>	<u>£</u>
Membership (Standing Order)	32426	Grants (Overseas & Courses)	25860
Membership (Cheques)	70	Grants (BSBD Meetings)	25910
Block Grant (CoB)	30000	Small meetings and other DB meetings	1700
Travel grant fund (CoB)	27500	Autumn Meeting 2010 (Oxford)	6000
Sale of addresses	0	Spring Meeting 2010 (Warwick) & 2011 (Kent)	22272
Spring Meeting 2010 (Warwick)	0	Prizes	356
ISDB Meeting 2009 Edinburgh	97450	Committee & administration	7484
Unpresented cheques 08-09	895.00	Newsletter	0
		ISDB membership	4882
		Bank Charges	50.00
		Refunds out	970.00
		ISDB Meeting 2009 Edinburgh	25000.00
Interest and Investment Appreciation:			
Barclays High Interest a/c	6		
Barclays Louie Hamilton a/c	2		
Total Income	<u>188,348</u>	Total Expenditure	<u>120,484</u>
		Net Surplus for the Year	67,864
		Unrealised Gains on Baillie Gifford	29,457
		Fund balance at 31st July 2009	172,964
		Fund balance at 31st July 2010	<u>270,285</u>

Notes

These accounts were prepared under the accrual basis convention, in accordance with the applicable accounting standards and Recommended Practice of Accounting by Charities. There have been no major changes to our financial arrangements this year.

1. The Louie Hamilton account valuation is at 14.6.10

2. This is the only restricted account and no call was made on it in the financial year 2009/10

Travel grants (Company of Biologists Travel Awards)

BSDB Spring and Autumn meetings

These are the *only* UK meetings for which there is BSDB support. Grants cover cost of registration (but not conference dinners) and basic travel if funds permit. Generally we are receiving more applications than we can fund in full and preference is given to student members who present posters. BSDB members based abroad are eligible for a contribution (max. £400) to attend our meetings. All applications for travel grants to attend BSDB meetings must be in the hands of the Treasurer by the published deadline.

Overseas meetings

There is considerable demand for funds to travel to meetings overseas. Applications are collected each month and a decision on awards made at the end of the month with funds awarded according to the remaining budget. To allow us to fund as many applicants as possible we are currently limiting awards to a maximum of £400. Preference is given to members presenting work at the meetings.

Practical courses

The BSDB will also provide funds up to a maximum of £500 for members to attend courses or to visit laboratories overseas. These applications are considered alongside those for overseas meetings.

I process the applications as rapidly as I can but it can be 6–8 weeks after you submit an application before you are notified of your award. Please note that I do not make funds available to attend meetings that have already taken place when I come to consider the applications. Please bear this in mind and submit your application at least two months before the start date of the meeting.

Applying for a travel grant

Members should complete a Travel Grant Application form and send it to the Treasurer. Forms can be downloaded from the BSDB website: www.bsdb.org.

Applications for overseas meetings are advised to be submitted 3–4 months in advance so that the BSDB contribution can be used as a lever to prise the rest of the money from other sources. Grants will NOT be awarded in arrears.

Please note: Nobody will be awarded more than one travel grant per year for an overseas trip. No more than two people from one department or one person from a group will be awarded a grant to a particular meeting. Also, due to our charitable status, the purpose of any award must be clearly identifiable as Developmental Biology

Hurry!

The Deadline for Travel Grants to the BSDB Spring Meeting is 31st January 2011

Warning!

Only members paying the correct subscription to the Society will be eligible for a Travel Grant

Louie Hamilton Fund

There is a small amount of money available from the Louie Hamilton Fund to provide travel support for handicapped members. Applicants should contact the Treasurer.

Subscription information

Full members	£35 per annum
Student members	£15 per annum

Student members that joined the Society in 2006 are reminded that they should upgrade their subscription to the full member rate of £35.





**British Society for Cell Biology &
British Society for Developmental Biology
Joint Spring Meeting
27-30 April 2011
University of Kent, Canterbury**

Fran Balkwill
Philippe Bastin
Nick Brown
Jonathan Chubb
Enrico Coen
Glan-Paulo Dotto
Suzanne Eaton
Sadaf Farooqi
Marie-Anne Felix
Frank Gertler
Darren Gilmour
Gisou van der Goot
Thomas Gregor
Bart van Haesebroeck
Wendy Havran
Denis Headon
Martin Humphries
Johanna Ivaska
Yogi Jaeger
Gareth Jones

Bruno Lemaitre
Frederick Livesey
Mark Marsh
Paul Martin
Alistair McGregor
Maxence Nachury
Nancy Papalopulu
Gregory Pazour
Lotte Pedersen
Paul Riley
Siegfried Roth
Craig Roy
Owen Sansom
Peter Stadler
Angelike Stathopoulos
Karen Steel
Karin de Visser
Kees Weljer
Sabine Werner
Tom Wileman

**Plenary lectures by
Mark Krasnow and Graham Warren**

Topics include: Cell Adhesion and Migration, Cilia and Flagella, Inflammation, Integrative approaches to Development, Pathogens and Membrane Traffic, Physiology and Disease, Plasticity and Evolution, Signalling and Development

<http://www.bscb-bsdb-meetings.co.uk/>

Scientific Organisers: Juan Pablo Couso, Richard Grose, Martin Lowe and Chris Thompson

The Graduate Students' Section

Every time I write a piece for the BSDB newsletter I get that sick feeling in the pit of my stomach because it means six months have passed since the last one and I am therefore six months closer to my ominous (and now very real) thesis deadline. Thankfully, the BSDB provides ample opportunity for me to get distracted from all this.

At the moment, the society is busy putting together things for the next spring meeting, being held jointly with the BSCB at the University of Kent, which means I'm currently underway (or, at least *should* be by the time you read this) with plans for the graduate symposium at the meeting.

I was pretty stoked with all the positive feedback we got after this year's symposium, so am happy to announce that we'll be holding it in a similar style (i.e. a chance for students to share their work with a wide audience of students and other researchers) and with a longer time slot. It was such a shame to only pick three abstracts out of so many quality submissions last year, so I'm happy to be able to extend the number of speakers this year. If you're keen to give it a go, just tick the box when you submit your abstract for the meeting.

We'll also be following the symposium with a science pub quiz at the bar, which should provide an opportunity for you all to show off that nerdy science-related trivia you never get a chance to use at your local pub quiz.

Since the last issue of the BSDB newsletter we've also seen the launch of The Node, an online

community for developmental biologists. As students I'm sure you're all aware of the adverse effects social networking sites can have on your productivity. Thankfully the Node is at least science-related, allowing you to procrastinate away guilt free. It's also a tremendous resource for finding out about what other researchers are up to, getting help and advice on your work or simply having a good rant. But as always with this sort of thing, it's only as good as the people who use it, so I encourage you all to log on and give it a go.

While I'm on the subject of social networking, I'd like to encourage you all to join the BSDB Graduate Student Facebook page (just search BSDB on Facebook). This is a great place to get in touch with other students directly, and is also where I post important bits of information, like abstract and travel grant deadlines for the BSDB meetings.

As always, feel free to get in touch if you have any questions about the BSDB, suggestions for things you'd like to see us do, or want to give us a hand with organising things in the future. Happy writing/working/procrastinating.

Hayden Selvadurai

h.j.selvadurai@sms.ed.ac.uk

BSDBook

Visit the 'BSDB graduate student group' at [Facebook.com](https://www.facebook.com/bsdbsociety) to keep up to date about student events

Get in touch and get involved!

I'm happy to consider anything for the newsletter: articles, short tips, etc.



Robert Whittle (1942-2010)

A scientist and a Gentleman

Phil Ingham

*Institute of Molecular
and Cell Biology,
Biopolis,
Singapore*

Robert Whittle



Robert Whittle, one of the pioneers of British developmental genetics, died suddenly in Brighton on August 23rd 2010. The grandson of a Church of England clergyman, Robert was born in a vicarage in Far Forest, Shropshire in 1942, where his father, an atheist and conscientious objector was working for the land army as a forester. Moving to Sussex with his family in 1948, Robert attended Lewes County Grammar School, before going up to Cambridge in 1961. With his friend Michael Ashburner, Robert was amongst the first intake of students at the newly founded Churchill College, where they both read Natural Sciences, specializing in Genetics in their final year. Robert was taught at Churchill by John Gibson, who had recently moved to Cambridge with his mentor John Thoday from the University of Sheffield and who subsequently became Robert's PhD supervisor. Under the influence of Thoday and Gibson, Robert's research focused on the genetic analysis of quantitative trait loci (the now very fashionable QTLs), studying the effects of substituting chromosomes from different lines of *Drosophila* with varying numbers of scutellar bristles and mapping the genes underlying this variation. Although Robert's research interests were to shift significantly on completion of his PhD thesis, this rigorous training in quantitative genetics was to leave its imprint on him – and his students – for the rest of his career. In 1968 he moved to Indiana University in Bloomington to embark on a period of post-doctoral research in the laboratory of the great *Paramecium* geneticist, Tracy Sonneborn, during which Robert became fascinated by the processes underlying the patterning of the single celled

protozoan.

In 1970, Robert returned to the UK (on the transatlantic liner the QEII – with a young family and accumulated possessions, this was, he told me, cheaper than flying in those days!) and to his home town of Lewes, taking up the post of Lecturer in Genetics at the University of Sussex that had recently been vacated by Ben Lewin (who would go on to found “Cell”, now recognized as the leading journal in the field). Robert was recruited to Sussex by Jimmy Sang, Professor of Developmental Genetics and a former colleague of Conrad Waddington. Jimmy's strong interest and expertise in *Drosophila* development had a great influence on Robert, so it was not surprising that he chose to abandon *Paramecia* and return to the organism of his PhD research in pursuit of his new-found interest in pattern formation. It was around this time that Antonio Garcia-Bellido was establishing his great school of developmental genetics at the Universidad Autonoma de Madrid and Robert, along with Peter Lawrence, made the pilgrimage to Spain to learn at the feet of the master. This was a formative experience for Robert, laying the foundations for his subsequent interest both in wing development and in homoeotic mutations. But through the fusion of concepts drawn from *Paramecium* biology as well as *Drosophila* developmental genetics, Robert's thinking was more *avant garde* than that of his contemporaries. Rather than focusing on the role of lineage in development – a dominant theme due to the influence of the *C. elegans* research community at the time and one reinforced by Garcia-Bellido's discovery of compartments

and the selector gene hypothesis to which this discovery gave rise – Robert instead was fascinated by how pattern emerged within populations of proliferating cells. In the mid 1970s he isolated mutants of two different genes, both of which caused spectacular pattern duplications in the wings and both of which it would later transpire, identified key components of the Hedgehog (Hh) signaling pathway. The first of these, *patched* (*ptc*), was known as *tufted* at the time, after the original allele that caused additional tufts of scutellar bristles (the subject of his PhD research) and a rather feeble wing phenotype. Screening for new alleles of this locus, Robert identified the “S2” (for “Sussex 2”) allele, which resulted in a much more dramatic disruption of the wing. Moreover, this allele was homozygous lethal, causing an embryonic phenotype identical to that of the *ptc* alleles that were subsequently isolated by Nüsslein-Volhard and Wieschaus in their famous screen, published in 1980. It was this realization, some ten years after he first isolated the *ptc*^{S2} allele, that allowed Robert to design a screen for new P-element induced alleles (the original breeding scheme for this screen in his instantly recognizable script is reproduced below): and it was these transposon tagged alleles that allowed my group to clone the *ptc* locus in collaboration with Robert. The second wing-pattern mutation that Robert discovered identified a new gene that he mapped and named *costal-2*. Although the role of Costal-2 as a key intracellular component of the Hh pathway in flies has been well established since the 1990s, its role in vertebrates has remained somewhat enigmatic; but just last

year - 35 years after Robert discovered Cos-2 in flies - three groups showed its orthologue Kif7 be a key component of the mammalian Hh signaling pathway. These are just two examples of Robert’s scientific legacy, in both of which I have a particular interest. But with his post-docs and students, Robert made several other important contributions, including the discovery and characterization of the *Distal-less* (*Dll*) gene (originally named *Brista* by Robert, but re-named *Distal-less* by the *Drosophila* nomenclature committee), the identification of lethal complementation groups in the Bithorax complex corresponding to *abdA* and *Abd-B* and the characterization of the role of *wingless* in patterning the wing imaginal disc.

Many members of the Society will remember Robert not only for his research achievements but also as an inspirational and dedicated teacher, both of undergraduate and post-graduate students at Sussex University. Indeed several former members of the BSDB Committee, as well as a Waddington Medal winner, were tutored by him in their formative years. Through his contribution to some of the early Open University Genetics modules – in which he struck more than a passing resemblance to Graeme Garden in his “Goodies” incarnation – Robert’s skills as a lecturer were appreciated by a much wider audience than most University teachers enjoy. And his involvement in the Workers Education Authority allowed his passion for communicating the intellectual elegance of genetics – and his distaste for its corruption by the eugenics movement - to extend

“an inspirational and dedicated teacher... several former members of the BSDB Committee and a Waddington Medal winner were tutored by him”

*“Robert was a man
who combined
intellectual rigour with
compassion and
tempered ambition
with humility”*

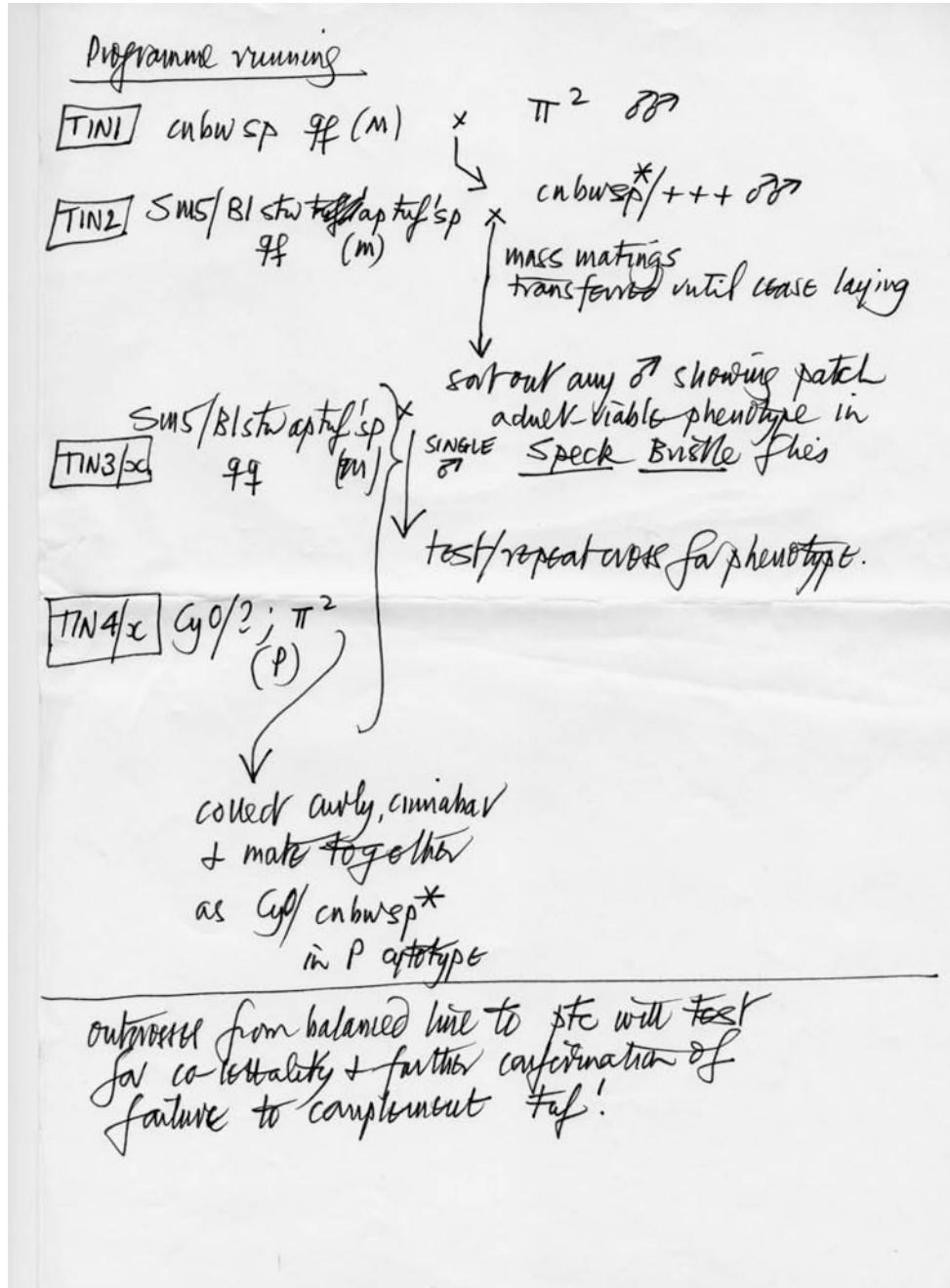
beyond conventional academic circles.

Although Robert was very “hands-off” as a PhD supervisor - he more or less let me do whatever I wanted - he taught me a great deal about the design and analysis of experiments and imbued me with his own aesthetic appreciation of the abstract logic of classical genetics. It was great fun working in the lab with him, the tedium of sorting through thousands of flies every day being relieved not only by stimulating scientific discussion but also by the constant stream of corny jokes and puns that emanated from his bench! At the Ninth Congress of the International Society of Developmental Biologists (ISDB) in Basel in 1981, I accompanied Robert on a boat trip up the Rhine to an ancient amphitheatre where the eminent developmental neurobiologist Victor Hamburger was to receive the Ross G. Harrison-ISDB Prize in Developmental Biology. It was a balmy late August evening and we were plied with copious quantities of excellent Rhine wines as we sailed, so by the time we disembarked close to the venue we were all feeling in a relaxed and jovial mood. Robert and I had been reading the list of delegates at the back of the Conference Booklet and had both noticed a number of delegates from the USSR, which was unusual at Western conferences in those days – Brezhnev was Soviet President and the Cold War was still far from over. “I see Krushchev is here” I quipped in a loud voice - thinking it amusing that there should be someone present at the meeting with the same name as Brezhnev’s predecessor – “yes but Lenin isn’t” came the instant riposte from Robert! Our mirth at this exchange

was abruptly halted as Anne McLaren, who we had not noticed was walking a few steps ahead of us, accompanied by an imposing grey suited figure, quickly span around and, fixing our gaze with an icy smile, exclaimed “allow me to introduce you to Professor Krushchev from Moscow University”! My amusement at this unexpected encounter was too much for me to contain and I made a hasty retreat to a point where I could watch as Robert, courteous to a fault, engaged the honoured Soviet guest in polite conversation!

From my first meeting with him in 1977, Robert treated me as an equal and a friend. He welcomed me into his family and shared his passions with me – not just for science, but for politics, no doubt influenced by his father’s pacifism, Bob Dylan, the Woodcraft Folk – a youth movement that he worked with that, to his irritation, I irreverently referred to as the Marxist–Leninist Boy Scouts – as well as Lewes Bonfire Nights; he was proud of his home town and its democratic traditions, dating back to the battle of Lewes, when Simon de Montfort defeated Henry III, and delighted in taking friends and visitors to the Cliffe Bonfire Society displays, the rowdiest and most exciting of those staged around the town each November 5th. Robert was a man who combined intellectual rigour with compassion and tempered ambition with humility: as Peter Lawrence once observed, “the reason Robert has not been more successful as a scientist is that he is too much of a gentleman”; a sad indictment of a research community all the poorer for his passing.

*Philip Ingham
Singapore, October 2010*



BSDB Spring Meeting 2011

27-30 April 2011

University of Kent at Canterbury

A Joint Spring Meeting with BSCB. BSDB organisers: Chris Thompson and Juan Pablo Couso

See poster on p7.

Plenary lectures by Mark Krasnow and Graham Warren

Signalling and Development
Suzanne Eaton, Marie-Anne Felix, Jon Chubb, Nancy Papolopulu.

Plasticity and Evolution
Siegfried Roth, Denis Headon, Alistair McGregor, Enrico Coen.

Cell Dynamics and Morphogenesis

Nick Brown, Daren Gilmour, Angelike Stathopoulos, Kees Weijer.

Physiology and Disease

Bruno Lemaitre, Sadaf Farooqui, Karen Steel, Paul Riley.

Integrative approaches to Development

Thomas Gregor, Yogi Jaeger, Rick Livesey, Peter Stadler

Talks will also be selected from abstracts.

Latest meetings news

Check the BSDB website for latest meetings updates and to submit details of meetings to be advertised to members.
<http://www.bsdb.org>

Ideas for a meeting?

A major task of the BSDB Committee is to host high quality scientific meetings. We welcome suggestions for future topics for meetings or for a half-day themed session at the Spring Symposium. Contact James Briscoe

BSDB Autumn Meeting 2011

3-6 September 2011. Nice , France

2nd Joint Meeting of the British and French Societies for Developmental Biology

Keynote speakers: Olivier Pourquie, Richard Harland, Robin Lovell-Badge, Cheryll Tickle

Future BSDB meetings

BSDB Spring 2012

This meeting will be held jointly with the British and Japanese Societies for Developmental Biology and the BSCB

15-18th April 2012. Warwick, UK.

BSDB organisers: Kim Dale and Malcolm Logan.

The meeting will cover exciting and wide-ranging topics in developmental biology and will feature a number of outstanding scientists, international experts in their fields as well as opportunities for participants to be selected for platform presentations.

Other meetings or courses of interest

For the latest and most comprehensive listing of upcoming meetings go to:

<http://thenode.biologists.com/events/>

Course: Embryonic Stem Cells as a Model System

Course organisers, Josh Brickman and Jenny Nichols provide some background

Closing date extended to 5th January 2011

'Embryonic Stem cells as a model system' is a project that we started almost six years ago in Chile. It combines a practical and theoretical course on developmental and stem cell biology, with a scientific meeting and various outreach activities. It arose out of a desire to help galvanize the young and successful developmental biology community in Latin America into taking a leadership role in the emerging stem cell field. We also sought to provide a means for new techniques and technologies to make their way rapidly into Latin American labs. The 2011 addition will take place in Mexico (Cuernavaca/Mexico City) and represents the continuation of an initiative started in Santiago, Chile (2007) and continued in Sao Paulo, Brazil (2009). The main objective of these workshops have been to provide access to a course on a similar level to the one normally offered by Cold Spring Harbour to scientists in Latin America, while building collaborative bridges with the UK developmental biology and stem cell communities. For this edition of the course, we will be funding up to 8 places for UK scientists and 16 from around Latin America. Any PhD student, post doctoral fellow or young principle investigator can apply.

The course is generally divided into four components: 1. Introductory lectures by the faculty members on the following topics: early mammalian development, extra-embryonic development;

ES cell derivation; ES cell pluripotency; human ES cells; neural and haematopoietic stem cells; ES cell mutagenesis and genetic manipulation; stem cell bioinformatics.

2. Practical course. Students are taught to derive, grow and differentiate ES cells, how to make chimeras and manipulate mouse embryos. 3. A symposium comprising invited talks by faculty members, established Latin American stem cell researchers, developmental biologists and the students on the course. 4. Extra-curricular events, which allowed for further one on one, informal interactions between all participants.

This program of both study and exchange has promoted the development of intense relationships and interactions between Latin American and UK participants and we are working to establish a fellowship program that will support collaborative projects that arise from students' interactions established with the faculty on the course. If you have an interest in participating in this program, please apply (the poster for the course is on the opposite page). We want to make sure we get a big and diverse input from the UK developmental biology community.

EMBRYONIC STEM CELLS

AS A MODEL SYSTEM
FOR EMBRYONIC DEVELOPMENT

**3rd Latin America Course and Workshop
MEXICO 2011**

27th February to 17th March 2011

UNAM - Universidad Nacional Autónoma de México
Instituto de Biotecnología, Cuernavaca, Morelos
Instituto de Fisiología Celular, Mexico City

Applications available on-line

Closing Date: Dec 15th, 2010

Funding available for all accepted participants

- ✓ Theoretical context for Stem Cell biology
- ✓ Concept of exploiting ES cells and ES cell technology
- ✓ Providing ES cell technologies to laboratories
- ✓ Discussion with experts in an informal setting
- ✓ Culminating in the 3rd Latin American Stem Cell Network Symposium

FACULTY AND SPEAKERS

- » Alejandro Schinder (Buenos Aires, AR)
- » Alfonso Martínez-Arias (Cambridge, UK)
- » Andrew Smith (Edinburgh, UK)
- » Austin Smith (Cambridge, UK)
- » Diana Escalante-Alcalde (Mexico City, Mexico)
- » Chris Wood (Cuernavaca, Mexico)
- » Guillermo Lanuza (Buenos Aires, AR)
- » Heiko Lickert (Neuherberg, GER)
- » Ivan Velasco (Mexico City, Mexico)
- » James Briscoe (London, UK)
- » Janet Rossant (Toronto, CA)
- » Jennifer Nichols (Cambridge, UK)
- » José Xavier Neto (Campinas, BR)
- » Joshua Brickman (Edinburgh, UK)
- » Luis Covarrubias (Cuernavaca, Mexico)
- » Meng Li (London, UK)
- » Peter Andrews (Sheffield, UK)
- » Philippe Soriano (New York, USA)
- » Robin Lovell-Badge (London, UK)
- » Sally Lowell (Edinburgh, UK)
- » Simon Tomlinson (Edinburgh, UK)
- » Tariq Enver (London, UK)
- » Tetsuya Taga (Tokyo, Japan)
- » Tilo Kunath (Edinburgh, UK)
- » Wendy Bickmore (Edinburgh, UK)
- » Yann Barrandon (Lausanne, Switzerland)

www.escellslatinamerica.org

The Woods Hole “Embryology” Course

Sorrel Bickley, a PhD student at the MRC-National Institute for Medical Research, reports on her experience of attending the “Embryology: Concepts and techniques in Modern Developmental Biology” course run at the Marine Biological Laboratory, USA

In June/July 2010, I joined a group of twenty-four scientists from around the world arriving in the small town of Woods Hole, Massachusetts to participate in the Marine Biological Laboratory (MBL) Embryology course. The MBL is the oldest private marine laboratory in the USA, and each summer around 1400 scientists travel there to study on a range of scientific programs. The Embryology course is a highly intensive 6-week programme. Now in its 116th year, it is one of the longest running courses at MBL.

The 2010 MBL Embryology class was made up of graduate students and post-docs from of a wide-range of ages, scientific backgrounds and nationalities. As a first year Ph.D. student from the UK I was one of the youngest of the group, but the class also included students from Australia, Italy, the Czech Republic and all over the USA. The course directors were Nipam Patel and Lee Niswander who, along with two undergraduate course assistants, did an unbelievable job and gave all the students a really special experience. Each section of the course was taught by leading academics in the field and many also brought members of their labs to help out, along with lots of exciting reagents and equipment.

A typical day on the Embryology course began with a morning lecture introducing the speaker’s work in the context of an embryological system. We studied a huge range of organisms so the students needed to quickly get to grips with each species and how it can be used. The class then spent around an hour questioning the speaker in a student driven discussion that came to be known as the “sweat box” as a result

of the lengthy and intense questioning the speakers were subjected to! It was also an opportunity for the lecturer to suggest interesting projects that could be pursued later in the lab.

Our afternoons and evenings were spent on practical work and we would normally end up in the lab until the early hours of the morning trying to get as much as we could out of every model system. We occasionally escaped to the beach for lunch or to town for ice cream, but we were lucky to have some very experienced and enthusiastic scientists leading the laboratory sessions and this meant that the lab was really the only place we wanted to be! The students were encouraged to design and carry out our own research projects, which gave us a great chance to try out new ideas as well as gain experience working together as part of a group. The equipment available was fantastic, and we were able to get some great images of our results using top quality microscopy equipment.

The course was structured around many different model and non-model organisms, beginning in the first week with cnidarians, ctenophores, choanoflagellates and sponges, taught by Nicole King and Mark Martindale. This gave us our first chance to use immunofluorescent antibody staining, a technique which we made considerable use of throughout the course and even gained it’s own special nickname - ‘schtaining’! A particularly interesting aspect of the week for me was to observe the striking similarities between choanoflagellates and the choanocyte cells of sponges. We also enjoyed a lot of discussion

about the evolutionary origins and advantages of multicellularity.

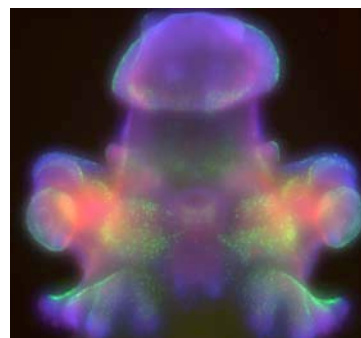
During our second week we moved on to cover nematode worms and arthropods. David Sherwood brought some fascinating *C. elegans* reporter lines to allow us to study cell migration and invasion through the basement membrane by observing the behavior of the anchor cell invading into the vulval epithelium. We also studied nematode evolution and the control of cell division versus differentiation. Nipam Patel then gave us an introduction into the world of arthropods and we also learnt about his work on lepidopteron wing patterning. We spent some time with Ishwar Hariharan considering the regulation of organ size and growth in *Drosophila*, and we particularly enjoyed the challenge of dissecting the imaginal discs from larvae. I started working on a group project analyzing the expression of the homeobox transcription factor *Ultrabithorax (Ubx)* in a range of arthropod species. The anterior expression boundary of *Ubx* appears to mark the transition from feeding to locomotory appendages.

Sundays were generally left free for the students to relax, but there were also some fantastic trips and social events organized. At the end of the second week we took a trip whale watching along the coast. The beautiful scenery and clear blue skies provided the perfect backdrop to an exhilarating journey during which we were lucky enough to get really close-up views of humpback whales and also some stunning sea birds

Our third week was split between zebrafish and *Xenopus* embryology, and we began with brilliant lectures by John Wallingford and the incredibly enthusiastic Ray Keller. In the lab we investigated everything

from cell lineage to the establishment of the dorsal/ventral axis and we also had a fun competition for the best Spemann-Mangold organizer graft to grow a two-headed tadpole (Congratulations to Barbora Konopová!). Our zebrafish lecturers also gave us a great insight into the advantages of this species for developmental studies, bringing with them an astounding range of morpholinos and mutant and transgenic zebrafish lines for us to experiment with. We were very lucky to be taught by leaders in the fields of pancreas, liver and neural development. A particularly interesting project that I spent some time pursuing was the analysis of the peripheral nervous system in zebrafish embryos following injection of various morpholinos such as netrins and mindbomb, which are known to lead to neurogenic phenotypes. We were able to observe the neurons and oligodendrocytes of treated embryos by the use of transgenic reporter lines or RNA *in situ* probes, and this helped me to understand some of the advantages of zebrafish as a highly accessible, easily observable model system.

As part of the course all the students were given the opportunity to take the lecturers out for dinner in the evening, and during the zebrafish section I enjoyed a great evening with Vicky Prince from the University of Chicago. She moved there from England so was able to give me some very useful advice about moving out to America to pursue an academic career. It was also really nice to get the chance to chat freely with a more senior academic without being afraid to say something stupid! Later in the course I also went for dinner with Richard Behringer and Andres Collazo who were both



An image of a squid embryo stained for Pax3/7 (green) and Phalloidin (red). (Sorrel Bickley)

wonderful company and I was really grateful for the experience.

At the end of the week Mike Shapiro gave a lecture about his work on the evolution of sticklebacks, and we were able to collect our own samples from the harbor to identify and make skeletal preparations of. I still have mine on my lab bench right now! Sunday was July 4th, which saw us participate in the annual Woods Hole parade. Our class wore different coloured T-shirts to represent the three germ layers and did an absolutely ridiculous and chaotic gastrulation dance as we marched through the town. This was great fun and hopefully some of the spectators understood what was going on!

As we got back down to work at the start of our fourth week we moved on to study chick and mouse embryology. I work with both of these species for my Ph.D. project so I was really looking forward to learning some new tricks as well as sharing my knowledge with the other students. Claire Baker and Lee Niswander introduced us beautifully to working with chick embryos, before Paul Trainor and Lori Sussel helped us to explore the mouse as a model. It was particularly exciting to try out growing organs in explant culture and also to try growing chicks with extra limbs by implanting FGF soaked beads. Richard Behringer also brought an amazing array of fixed vertebrate embryo samples for us to experiment on including turtles, snakes, bats and wallabies.

We next had the difficult task of trying to learn about the embryology of ascidians, sea urchins, hemichordates and lophotrochozoans all in a single week! Dave McClay gave us a great introduction to the use of urchins to study cell fate specification and synchronous radial cleavage. We

were also able to carry out fate mapping by microinjection of lineage tracers. We then contrasted this system with that operating in lophotrochozoans such as *Ilyanassa*. We observed the spiral cleavage process and investigated polar lobe ablation, cell labeling and gene knock-downs. We also had great fun 'schtaining' squid embryos and nemertean (ribbon worm) pilidia.

During our final week Alejandro Sanchez Alvarado introduced the students to the strange and wonderful regenerative properties of planaria, which we were able to cut them up and also graft different pieces back together. We were amazed to learn that about work by Thomas Hunt Morgan that demonstrated that a piece corresponding to 1/279th of a planarian could successfully regenerate into a new worm! We also spent some time studying the development of annelids with Elaine Seaver, which produced some stunning 'schtaining' images. To conclude the course we then learnt about some of the most rapidly growing fields in embryology including embryonic stem cells, quantitative analysis and epigenetic regulation. Finally Mike Levine gave a lecture and held a very entertaining 'sweat box' discussion to wind up the course. We held a brilliant final night party before everyone had to pack their bags and head back to the real world.

For me taking part in the embryology course completely changed the way I approach my own work and gave me much more confidence in trying out new techniques and approaching others for advice. The intense and challenging work environment made me more motivated in my own project and more able to understand and appreciate the work of others outside my field. In addition, I made some great contacts and some truly great friends.



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dmm.biologists.org

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Workshops

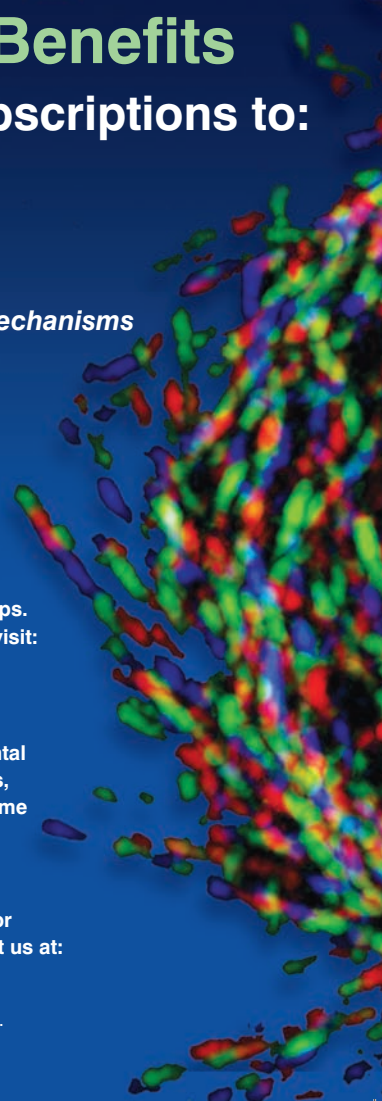
The Company has recently launched a series of Workshops.
To suggest a topic or apply to attend a future workshop, visit:
workshops.biologists.com

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Inside the Human Genome-A case for non-intelligent design

John C. Avise

Open University Press
ISBN-10: 0195393430 £12.99

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*"Avise...comes to the
conclusion that, on
the balance of
evidence, it is
Evolution 1, Intelligent
design 0.."*

Some things in life are inherently wrong, going against the grain of everything you hold to be right. Instant custard. Anne Widdecombe hoofing it up on prime-time television. Intelligent Design. Yes, Intelligent Design, the legality-skirting branch of Creationism which tries to gloss over the God bit and call itself a 'science', explaining our origins and beautiful engineering with a healthy dose of supernatural help. But why should we dismiss such a theory out of hand? Would any of us admit to having those late-night crises of confidence when those "But how...?" questions come nagging to the front of your mind, wondering how exactly to deal with that tricky issue of irreducible complexity (you know, that bit about how if a complex system doesn't have all its functioning parts it won't work. So how could, say, your blood clotting system, have evolved piecemeal?). John C. Avise seeks to give us concise explanations of how to turn these arguments around, illustrating with many, comprehensively annotated examples of precisely how the structure and function of the human genome gives a whole raft of evidence against the Intelligent Design exponents.

Avise leads us into the subject with a (slightly dry) treatment of the history of the pro/anti-evolution debate, followed by a reassuring debunking of what he terms commonly held falsehoods about natural evolutionary processes, such as the assertion that "Evolution equals random chance" (it doesn't, in case you were in any doubt!) Aimed at the interested lay-reader and dyed-in-the-wool scientist alike, Avise introduces the ins and outs of genomic evolution, touching on how natural selection is, "...just one of a nexus of evolutionary forces...", rather than the Panglossian force commonly held to act for the general good. Each chapter brings an in-depth treatment of a so-called design feature of the genome – the fallibility of protein coding genes that so regularly and spectacularly fail, or the apparently wasteful plethora of repetitive DNA elements – and considers the contradictory nature of such when viewed from an Intelligent Design standpoint compared with a purely biochemical position. Why would a supreme designer allow such imperfections? Why would a caring creator permit the genocide and suffering caused by so many genetic diseases?



Avise addresses this theodicean
Eternal Paradox with respect to
each of these design
imperfections and comes to the
conclusion that on the balance of
evidence, it's Evolution 1,
Intelligent Design 0. And I for one
can sleep easier with the
knowledge clarified as to exactly
why this is the case.

Reviewing a book for the BSDB

Suggestions for future book reviews are always welcome. If you know a book you think should be reviewed, please contact the Editor. Reviewers receive a free copy of the book for their trouble.

Here are some possibilities:

From CUP

Cancer Stem Cells
W. L. Farrar
9780521895283

The Neural Crest, Second Edition
N. Le Douarin, C. Kalcheim
9780521122252

Shoot Apex and Leaf Growth (first published 1975)
R. F. Williams
9780521112871

From OUP

Doing Science
Design, Analysis, and Communication of Scientific
Research
Second Edition
Ivan Valiela
978-0-19-538573-1

BSDB Discount from CSHL Press

Cold Spring Harbor Laboratory Press is offering a 15% discount on titles for BSDB members. In order to take advantage of this, visit their special offers page (<http://www.scionpublishing.com/special/index.php>).

Recent titles from CSHL Press:

Statistics at the Bench: A Step-by-Step
Handbook for Biologists
Martina Bremer
978-087969857-7

Live Cell Imaging: A Laboratory Manual,
Second Edition
Robert Goldman (ed.)
978-087969893-5

Mouse Hematology: A Laboratory Manual
Michael P. McGarry, Cheryl, A. Protheroe,
James J. Lee
978-087969886-7

Francis Crick: Hunter of Life's Secrets
Robert Olby
978-087969798-3

Journal discounts for members

BSDB member discounts from Elsevier Press:

Mechanisms of Development (print): \$120

Mechanisms of Development + Gene Expression Patterns (print): \$125

Developmental Biology (print): \$380



The main function of the BSDB Committee is to organise our meetings, from deciding on appropriate topics to arranging organisers and venues. If you have any ideas on topics for a good meeting, or on a good venue, don't hesitate to convey them to James Briscoe (or another committee member). The officers of the Society will be happy to answer any questions relating to their specific subjects.

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news:

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<http://www.biologists.com/web/index.html>



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