

EUROMECH

EUROPEAN MECHANICS SOCIETY

Final Report

Please send this report to the Secretary General of EUROMECH, within one month after the Colloquium.

EUROMECH Colloquium No: 422

Title: Pattern formation by motile micro-organisms and cells

Dates and location: 3rd to 5th December, 2001 at the University of Leeds, UK

Chairperson: Prof N.A. Hill

Co-Chairperson: Dr M.A. Bees

Is there need of another Colloquium on the same or a related subject? Which year?

Full registration fee: £ 48.00

What other funding was obtained? Isaac Newton Institute and the London Mathematical Society.

What were the participants offered? Meals

Number of members of EUROMECH (reduced registration fee): 2

Number of non-members of EUROMECH (full registration fee): 56

Number of participants from each country: Iceland 1

38
19

57

Austria	_____	Germany	<u> 3 </u>	Romania	_____
Belgium	_____	Great Britain	<u> 34 </u>	Russia	<u> 6 </u>
Byelorussia	_____	Greece	_____	Slovakia	_____
Bosnia	_____	Hungary	<u> 1 </u>	Slovenia	_____
Bulgaria	_____	Ireland	_____	Spain	_____
Croatia	_____	Italy	_____	Sweden	_____
Czech Republic	_____	Latvia	_____	Switzerland	_____
Denmark	_____	Lithuania	_____	Ukraine	_____
Estonia	_____	Netherlands	_____	Yugoslavia	_____
Finland	_____	Norway	_____	Turkey	_____
France	_____	Poland	_____	Others	<u> 13 </u>
Georgia	_____	Portugal	_____	Total	<u> 57 </u>

Scientific Report

Euromech Colloquium 422 on 'Pattern Formation by Motile Micro-Organisms and Cells' was hosted by the Department of Applied Mathematics at the University of Leeds, UK from 3rd to 5th December, 2001. Professor Nick Hill (Glasgow) chaired the meeting with Dr Martin Bees (Surrey) as the co-chairman. It was recognised as a satellite meeting to the four month long programme 'From Individual to Collective Behaviour in Biological Systems' at the UK's Isaac Newton Institute (INI), and received substantial joint funding from the INI and the London Mathematical Society. The fifty-eight participants contributed a total of 45 presentations including a lively poster session. Prizes for the best student posters were awarded to Rachel Bearon (University of Cambridge) and Richard Hillary (University of Surrey).

A notable feature of the workshop was bringing together of mathematical modellers in plankton population dynamics, where dispersion is mainly caused by oceanic currents, and those in bioconvection with theorists in the growth of bacterial colonies and the behaviour of slime moulds. Mechanics plays a fundamental role in all of these biological problems. The standard of the talks was excellent, and there was much energetic discussion enhanced by keynote experimental and biological presentations. The vigorous state of mechanics applied to biology in Europe and worldwide was demonstrated by the wide range of new experimental results, theoretical models and mathematical results which were presented, e.g. on travelling waves, Taylor dispersion in suspensions of swimming micro-organisms, angiogenesis, and the fluid mechanics of swarming bacterial colonies.

The very successful theme of a workshop devoted to mechanics applied to biology was a timely new venture for Euromech, and points the way forward for future developments of the Society's interests.

N.A. Hill

24th January, 2002