

INSERM

Institut National de la Santé et de la Recherche Médicale

Cours pratique de génie génétique Constitution de banques d'ADN génomique à l'aide de phages ou de cosmides

Edited by S. Wain-Hobson, C. Bishop et A. Dejean
1984, Vol. 118, 88 pages, 60 FF H.T.

Nouvelles techniques d'étude d'hémostase et de thrombose

Edited by S. Levy-Toledano
1984, Vol. 120, 128 pages, 75 FF H.T.

Méthodologie des études épidémiologiques et cliniques sur le diabète

Edited by Laure PAPOZ
1984, Vol. n° 122, 264 pages, 90 FF H.T.

Naître en France

Editeb by C. RUMEAU-ROUQUETTE, C. du MAZAUBRUN, Y. RABARISON



1^{er} titre de la collection
«Grandes enquêtes»
Coédition INSERM/DOIN
240 pages, 102,80 FF H.T.

LES EDITIONS
INSERM

101, rue de Tolbiac
75654 Paris Cedex 13
France

Tél. : 584.14.41

Prepayment is required Bank cheque
to the order of INSERM

by one of the grand masters of the field. The fact that the conference took place more than two years ago is, however, significant: the reprehensible delay in publication has not in fact rendered most of the material obsolete, because progress just isn't that fast any more.

The main topics covered by the meeting were structural dynamics, including the curious affair of the shortening thick filaments in *Limulus*; mechanics, particularly tension transients and stiffness; and energetics. The text is enlivened by reports of verbal exchanges, such as this baffling dialogue:

A: Where you say A-band mass, you don't actually mean "mass" do you?

B: What would you have me say?

A: Whatever you mean — what do you mean? or this outburst from an exasperated critic:

X: I mean you've just done the control, got the wrong results, and then persist in fitting your hypothesis?

Y: No . . .

A lot of effort at the conference went into reconciling the evidence from spectroscopic probes with the rocking crossbridge model: if the probes showed no motion, could they all have been attached (by sheer bad luck) to a portion of the myosin head that remained fixed to actin, while another unlabelled portion did the rocking? The need for detailed crystallographic structures of the relevant proteins was heavily emphasized; and there is now (two years later) a glimmer of hope that this may be achieved before the retirement dates of those who have devoted

their lives to the crossbridge hypothesis.

It would be a mistake to belittle this obsession with molecular detail by comparing it with the fruitless debates of mediaeval theologians, as Graham Hoyle tends to do in his recent book (*Muscles and their Neural Control*, published by Wiley in 1983). If (dreadful thought) the crossbridge head turns out not to be the source of motion after all, then belated and more widespread attention will have to be given to iconoclastic ideas such as W.F. Harrington's contractile S-2 region, or to charge-effect hypotheses of the kind adhered to by G.F. Elliott. Neither of the last-named workers presented papers at the conference in question, but occasional references to their thoughts appear in the proceedings like Banquo's ghost at the feast in *Macbeth*.

It is imperative to resolve the uncertainties — not just for the satisfaction of those involved with muscle, but because motility is now seen to be of such universal importance in cell biology. The muscle proteins or their analogues are so widely distributed among cell types that a single basic mechanism seems rather likely, even though control systems vary considerably. It remains a central problem to find out exactly what goes on, and the present uncomfortable state of spasm in the field must surely soon be succeeded by purposeful movement. □

Michael Spencer has just given up being a Senior Research Fellow in the Department of Biophysics at King's College, University of London.

Starting with laser spectroscopy

G.R. Wilkinson

Foundations of Laser Spectroscopy.

By Stig Stenholm.

Wiley: 1984. Pp. 268. £40.95, \$36.95.

ALTHOUGH the laser was invented before most of our undergraduates and post-graduates were born, laser spectroscopy is still a young and active area of research. Hence Dr Stenholm's book, which expounds upon the foundations of the subject, is likely to be widely read.

The author starts by establishing a notation and recalls the basic principles of electrodynamics and quantum mechanics. Following this introductory material is a chapter in which the response of the laser medium to strong electromagnetic fields is derived, and another which treats the physical basis of laser operation (this latter account might have been more useful if consideration of the working of some actual lasers had been included). The next chapter contains description of some applications to laser spectroscopy; here I found the treatment rather abstract for the

average reader, who will have to look elsewhere for a review of the spectroscopy involved in lasers. Fluctuations are concisely introduced in Chapter 5, whilst finally field quantization and some of the simplest consequences are discussed. The book contains helpful comment and references at the end of each chapter.

The author, a theoretical physicist,

intends this volume for beginning theorists and experimentalists who lack extensive training in algebraic manipulations, hence it contains more equations than are needed for readers more accustomed to mathematical sophistication.

This is indeed one of the book's most valuable features; however I am not sure that the claim that it can be used as a textbook for a course, even without previous knowledge of laser physics, is valid. For example it is disappointing to find that the author has left out mention of processes belonging to non-linear optics as these are so prominent at the present time.

Despite the misgivings that I have as a spectroscopist, this is undoubtedly an important book, and one which will not date quickly. Every worker in the field of laser spectroscopy should have access to a copy. □

G. R. Wilkinson is Professor of Physics at King's College, University of London.