Primary biliary cirrhosis and primary sclerosing cholangitis are of infectious origin!

EDITOR—Haydon and Neuberger (Gut 2000;47:586–8) elegantly summarised the possibility that specific bacterial and viral pathogens may trigger early bile duct damage in the pathogenesis of primary biliary cirrhosis (PBC). It was concluded that a chronic infection, probably of viral origin, was driving an immune response with antimitochondrial and other autoantibodies enhancing the tissue damage in later stages of PBC. Besides detection of antibodies specific for mycobacterial antigens, such as the 55 kDa and 65–75 kDa antigens of M gordaeas, in PBC the authors emphasised, based on studies by Mason and others, that immune responses detected by immunoblotting to retroviral proteins with homology to HIV p24 and other retroviral antigens, such as HLA, are common in PBC, in primary sclerosing cholangitis (PSC), and in Sjögren’s disease.

Recent studies propose a possible role for Helicobacter pylori in Sjögren’s disease.1 Contradictory data have appeared more recently based on a possible high relevance of anti-Helicobacter antibodies in saliva and sera of these patients. Most recently, Fox et al found that patients with chronic cholangitis in Chile were commonly infected by bile tolerant Helicobacter species, previously only detected in chronic liver disease in mice and other rodents, such as H hepaticus and H bilis.2 Nilsson et al first reported on bile and liver samples positive for Helicobacter DNA by polymerase chain reaction (PCR) in nearly half of 24 patients with PBC and PSC, and later immunoblot analyses of patients with these and other chronic liver diseases.2 Conflicting negative PCR results on bile were reported by Tanaka and colleagues3 while studies in Taiwan and Korea regularly seem to detect Helicobacter in human bile in chronic cholestatic bile tract diseases.4 Recently, Buljat et al reported a strong correlation between bile duct malignancies and the presence of Helicobacter DNA in bile.5 Since bile acids, intestinal acids, and highly charged mucin components are strong inhibitors of the PCR reaction, all of these studies have to be interpreted with caution until methods to safely remove or neutralise the effect of these inhibitors in bile, bile tract, and liver biopsies have been developed. We recently reported that PCR analyses of formalin fixed, paraffin embedded liver, pancreas, and bile tree samples may be a safe way to produce reproducible PCR analyses of Helicobacter and other potential bacterial invaders of the human bile tract.6 Interestingly, preliminary findings in our study on experimentally infected laboratory animals with various Helicobacter strains suggest that these may be translocated from the stomach and the intestine to the liver, and we speculate that this may involve uptake and intracellular survival in macrophages and other professional phagocytes activated in the stomach during most Helicobacter infections (T Wadström et al., unpublished observations). The pathogenesis may then be similar to infection of the bile tree with bile tolerant and bile adapted strains of Salmonella typhi and other enteric organisms, known to invade the bile tree in chronic infections and in carriers, and to increase the risk of later development of primary biliary cirrhosis, a disease associated with PSC in humans. Several laboratories are now focusing on development of a mouse model to study bile tract infections with these organisms. Interestingly, infection of porcine bile into the murine bile tree causes immune reactions with tissue damage, similar to PBC. It is tempting to speculate that various Helicobacter species may possibly other “new” bile and liver pathogens in mice, other rodents, and dogs may also invade the human bile tree and liver. Further development of quantitative PCR (real time PCR and related methods) as well as immunoblot and immunohistochemistry staining methods for bile tree and liver biopsies will tell us if the report on approximately 50% Helicobacter infection in Swedish patients can be confirmed in studies using “backing up” diagnostic procedures. Recently, we have demonstrated morphologically intact spiral and coccoid-like forms of Helicobacter pylori by immunohistopathology and transmission electron microscopy (TEM) in a patient with PSC (fig 1A, B).

FUTURE PERSPECTIVES

The strong link between PSC and ulcerative colitis with associated malignancies in the colon and liver emphasises the importance of continuing analyses of Helicobacter and other new candidates which may trigger early development of the disease, and to consider antibiotic treatment studies in animal models. Isolation of a novel Helicobacter species from cotton top tamarins with a high incidence of ulcerative colitis-like disease supports this.7 The prominent early immune responses to Helicobacter antigens in severely ill PBC and PSC patients2 (T Wadström et al., unpublished observations) may imply that they will not respond to antibiotic therapy for Helicobacter and other pathogens when these patients develop clinical disease. However, development of sensitive immunodiagnostic tests may serve as a screening tool and permit early diagnosis of Helicobacter associated bile tree and liver diseases in human patients as well as in laboratory animals.

We would certainly like to add PBC and PSC to the list of infectious diseases,8 and it seems likely that in a certain proportion of patients, H pylori and other Helicobacter species may play a role in the pathogenesis.

T WADSTRÖM

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Our own studies were supported by the Swedish Medical Research Council (16X-04723).


Measurement of tumour necrosis factor α

EDITOR—In their paper (Gut 2000;47:281–7), von Baehr et al suggest that the high sensitivity Quantikine ELISA for tumour necrosis factor α (TNF-α) is capable of
differentiating between trimeric (bioactive) TNF-α and proteolytic split products of TNF-α. Both forms are thought to be measured by the Medgenix assay. They go on to propose that this allows a measure of recently released bioactive TNF-α as opposed to an estimate of release over past hours. The authors do not include any data to substantiate such a claim.

Following discussion with R&D systems, we can confirm that they do not claim that their high sensitivity kit measures only trimeric (bioactive) TNF-α and that there are no data comparing this kit with a bioassay as they measure different things, namely immunoreactivity (mass) versus bioactivity. The apparent twofold greater level of TNF-α activity (mass) versus bioactivity. The apparent twofold greater level of TNF-α activity (mass) versus bioactivity. The apparent twofold greater level of TNF-α activity (mass) versus bioactivity. The apparent twofold greater level of TNF-α activity (mass) versus bioactivity. The apparent twofold greater level of TNF-α activity (mass) versus bioactivity.

We observed a strong correlation between the two assays and the Medgenix assay. In contrast with the R&D assay it detects TNF even 24 hours after stimulation (fig 4 in Asadullah and colleagues). In addition, monoclonal antibodies recognising and neutralising TNF interact with the R&D assay but not with the Medgenix assay. Hence the differences between the assays are not simply due to differences in calibration. If sera that contained TNF immunoreactivity were fractionated into fractions less than or greater than 40 kDa (the trimer has about 51 kDa) it was observed that the Medgenix but not the R&D assay recognised low molecular weight as well high molecular weight fractions (unpublished data). In summary, there is strong evidence that the Medgenix assay recognises biologically inactive TNF split products in addition to the bioactive TNF trimer but the R&D assay does not.

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Reply

EDITOR,—Several years ago we compared different tumour necrosis factor (TNF) assays. We observed a strong correlation between the bioassay and the R&D assay (r=0.88) whereas the correlation was poor (<0.3) between both assays and the Medgenix ELISA. Moreover, the kinetic studies after in vitro lipopolysaccharide stimulation showed that bioactive TNF is produced for a few hours only whereas the Medgenix TNF assay (in contrast with the R&D assay) detects TNF even 24 hours after stimulation (fig 4 in Asadullah and colleagues). In addition, monoclonal antibodies recognising and neutralising TNF interact with the R&D assay but not with the Medgenix assay. Hence the differences between the assays are not simply due to differences in calibration. If sera that contained TNF immunoreactivity were fractionated into fractions less than or greater than 40 kDa (the trimer has about 51 kDa) it was observed that the Medgenix but not the R&D assay recognised low molecular weight as well high molecular weight fractions (unpublished data). In summary, there is strong evidence that the Medgenix assay recognises biologically inactive TNF split products in addition to the bioactive TNF trimer but the R&D assay does not.

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Chromosome 3p and inflammatory bowel disease

EDITOR,—We were particularly interested to read the paper of Hampe et al (Gut 2001;48:191–7) which provides some supportive evidence for the presence of a gene involved in susceptibility to inflammatory bowel disease on chromosome 3p. As Hampe et al describe, this region of interest was initially identified in a study of 186 affected sibling pairs, all resident in and indigenous to the UK. Since that initial observation, subsequent genome wide scans in European and North American populations have produced inconsistent data for the chromosome 3p region. There are a number of possible explanations for the inconsistent data, all well summarised by Hampe et al.

We suggest that the issue of heterogeneity between populations may be pertinent to the study of the chromosome 3 loci. We noted with interest that the dataset of 533 sibling pairs studied by Hampe et al includes a high proportion (48%) of UK sibling pairs, together with sibling pairs from Germany (46%) and the Netherlands (6%). In view of the fact that there appears to be heterogeneity between the chromosome 3p region and that there are no data on susceptibility to inflammatory bowel disease in the UK population than in other populations.

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Reply

EDITOR,—The Guidelines for the management of the irritable bowel syndrome supplement 1 was a commendable enterprise, but the R&D assay does not. In view of the fact that there appears to be heterogeneity between the chromosome 3p region and that there are no data on susceptibility to inflammatory bowel disease in the UK population than in other populations.

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Indecision and irritable bowel

EDITOR,—The Guidelines for the management of the irritable bowel syndrome supplement 1 was a commendable enterprise, but the R&D assay does not.

The guidelines rightly pointed out the limitations of “end organ” treatments compared with centrally directed therapies, such as hypnosis and relaxation methods. However, these are also rarely effective when a patient has a nagging personal problem at the back of his or her mind. Uncovering such doubts requires open ended questions as recommended by Almy.2 Patients may be encouraged to make such decisions by the likelihood of remission of symptoms if they do.

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Reply

The importance of stressful life events is of course well recognised and new evidence is constantly accumulating. In addition to the earlier papers quoted by Dr Paulley, more recent publications in Gut indicate that resolution of chronic life stresses are important predictors of clinical outcome in irritable bowel syndrome supporting the earlier publications quoted by Dr Paulley.

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BOOK REVIEWS


A booklet little larger than the size of a two column (10 cm x 17 cm) may seem unimportant. But this is an exception. This publication is for patients with ulcerative colitis and such sources of information should be the concern of gastroenterologists. It has been written by Andrew Robinson, whose self management programme for patients with colitis lead to fewer outpatient visits, more rapid treatment of relapse, and improved patient satisfaction (Gut 1999; 44:A12), and Anne Kennedy, a research fellow of gastroenterology and has been assisted by a professional writer and sensibly had the guide endorsed by the Plain English Campaign.

The guide consists of two booklets in a single plastic folder. Part 1 includes an overview of ulcerative colitis, its causes, symptoms, and surgery. Part 2 is an individual patient record. There is much to be commended, with detailed information helpfully summarised in coloured boxes ("Things to Remember"), or treatment options discussed ("Your Choice") and anedotes from patients that give a personal appeal. Clinical views and opinions are, on the whole, well balanced and I could see this guide being a valuable contribution to patient information. Faults however qualify this commendation. The surgical subsection on ileorectal anastomosis for ulcerative colitis is wholly inappropriate and there is confusion in terminology in the section on pouch surgery. Factual errors (such as a "2% risk" of ulcerative colitis in offspring, or an "s-mercaptopurine") and statements such as "immunosuppressants may make your baby very small and can lead to abnormalities" are simply misleading. Indeed the whole section on pregnancy is poor, with two anecdotes from patients advising cutting down or stopping maintenance therapy. It was surprising that there was no information for adolescents, or on osteoporosis, and little mention about the dilemmas of coexisting irritable bowel syndrome or the implications of differentiating ulcerative colitis from Crohn’s coli- 
sis. A brief mention of new therapies on the horizon would have suited the aim of the guide. Nevertheless, there are points that students and young doctors with a firm understanding of the "new biology", embracing genetics, molecular medicine, and developmental biology. This book deals with these things, and although its subject is a small part of the totality of human biology, it is dealt with in depth by recognised leaders. Ian Sanderson and Allan Walker must be congratulated for bringing their research together.


When I was a fellow with Allan Walker 15 years ago, gut development was a topic of interest to a handful of researchers worldwide. A classic review by Grand, Watkins, and Torti published in 1976, and Koldovsky’s monograph Development of the Functions of the Small Intestine in Mammals and Man in 1969 brought together much of what was then known about the ontogeny of the human gut. Developmental biologists were beginning to recognise the opportunities offered by this rapidly differentiating organ to understand the interactions of genetic endowment and environmental influences in early life. The focus of much research was on the process of adaptation to milk feeding. With the survival of ever more preterm infants, the function of the immature gut and its capacity to deal with enteral feeds prematurely were questions of increasing practical concern.

I had the grand idea at that time to produce a short book bringing the field together. But I quickly realised that this was growing too fast but that a full understanding of gut development and function also required an understanding of the composition and properties of human milk and the metabolism of the newborn. The developmental biology of gut development and function also required an understanding of the composition and properties of human milk and the metabolism of the newborn. The development of the gastrointestinal tract and lactating mammary gland are complementary organs, jointly involved in the transfer of nutrients and other substances from mother to infant. Until weaning the neonate is an extra-gestation fetus, and breast milk and gut are analogous to the uterine-placental interface. This book goes a long way to recognising this. Each chapter (or even "stand alone" review) is written by a leading figure or group expert in its field. Together they cover the major aspects of gut development and function but apart from a short preface there is no overview or attempt to synthesise the book’s contents. It would be impossible for one author to write this book. The impact of molecular biology has moved the subject from the essentially descriptive science, with some experimental work in vivo, to the level of the cell and gene. This has shifted away from the womb, breast, or incubator and into the laboratory. This book is a valuable starting point for students or researchers wishing to get a good grasp of the basic biology of human gut development but it will be of little interest to the practising neonatologist struggling to define rational approaches to feeding the preterm neonate.

Medicine is fast becoming a major branch of biology, concerned with the application, often experimentally, of novel therapies based on insights and new understanding of biological processes. However, at a time when the biological sciences are advancing so rapidly, and manipulation of genes within cells, including those of the embryo, is possible, the gap between the worlds of medicine and biology is widening rather than narrowing.

The last century saw the integration of medicine and science, and a determination to base the practice of the former on the latter. At the beginning of this century we are still struggling to define a core of knowledge, skills, and ideas to teach our medical students. The wide scope of what we currently regard as the province of medicine now includes sociology, psychology, epidemiology, etc, and the basic sciences have been squeezed. We may be making a mistake in failing to equip medical students and young doctors with a firm understanding of the “new biology”, embracing genetics, molecular medicine, and developmental biology. This book deals with these things, and although its subject is a small part of the totality of human biology, it is dealt with in depth by recognised leaders. Ian Sanderson and Allan Walker must be congratulated for bringing their research together.


While the oesophagus has provided much interest to physicians and surgeons, particularly since the advent of endoscopy, manometry, and pH monitoring, to many pathologists it represented a muscular tube of relative pathological disinterest. Perhaps compared with the stomach and the intestines there is a relative paucity of interesting pathological conditions to study. Barrett’s oesophagus has certainly changed much of that perspective and the fact that entire books can now be devoted to the study of the pathology of the oesophagus is a real testament to an ever widening spectrum of pathological interest in the organ. This volume represents the first English translation of the second edition of this book, previously published in Japanese only. Dr Takubo’s book follows the excellent, but now time expired, efforts of Drs Enterline and Thompson in producing a comprehensive pathological survey of the oesophagus. This book is certainly all inclusive and most comprehensive. It is a short book, quite beautifully illustrated, mainly in colour, and includes diverse pathological investigations such as cytology, immunohistochemistry, and electron microscopy to good effect. Most importantly, it is clinical in orientation, and the use of numerous endoscopic images will be of interest not only to practising endoscopists but also to pathologists and researchers.

Dr Takubo has developed an international reputation for his work in various aspects of the pathology of the oesophagus and his efforts in producing this book are to be applauded. Differences in the pathological assessment of tumours in the gut between
Western and Japanese pathologists have recently been highlighted. In this book, inevitably favouring Japanese methodology, such differences are perhaps less marked, for the oesophagus at least, than other areas of the gut and these do not cause particular concern for the Western pathologist. The only slight irritations of this book are the references which are all lumped together at the end and I found referring to these a little labourious. Otherwise, I have no complaints. All those with a keen interest in diseases of the oesophagus will find this well written, well illustrated, and extremely well researched and referenced textbook an informed read and an invaluable source of reference. I thoroughly recommend it.

N A SHEPHERD


In his preface, Dr Heatley states “Having been involved in the production of one of the established texts on this subject, and also having contributed to others, I have written this book with the generalist in mind. It is intended mainly for those in primary care but, hopefully will also be of value to many in other disciplines including hospital specialties not principally involved with *H pylori* management, including those in care of the elderly patients, paediatrics, general bacteriology, chemical pathology, nuclear medicine and infection control, as well as others.” To what extent do I think Dr Heatley has succeeded in his aims in producing a book suitable for general practitioners and other non-gastroenterologists?

This is actually the second edition of a book originally published in 1995 and has been extensively updated. The book is only 64 pages in length with some 22 figures and 24 tables. It is divided into four chapters entitled: (1) *Helicobacter pylori* the organism; (2) *Helicobacter pylori*: the clinical problem; (3) Management of *Helicobacter pylori* infection; and (4) Managing dyspeptic conditions in primary care. Considering the fact that thousands of original papers have been written in the 16 or so years since Barry Marshall and colleagues first “discovered” the bacteria, I am somewhat surprised that their concise and succinct summarisation of the relevant literature is well presented. However, there are no references or lists of suggested reading, and I think this is a weakness.

I thought the first three chapters were excellent but was frankly a bit disappointed with the fourth and final chapter dealing with the management of dyspeptic conditions. In this era of “evidence based medicine” perhaps the author is correct to be so critical of, for example, the evidence that *Helicobacter pylori* is indeed a class I carcinogen, as suggested by the WHO or the Maastricht Consensus report’s recommendations on the management of *Helicobacter pylori* positive NGD. Perhaps the realities of the real world mean that HD patients if told they have a bug in their stomach which if left might have a 1:4 chance of later causing a peptic ulcer or a 1:100 chance of turning into stomach cancer, will opt for eradication therapy. Textbooks in such a fast moving field as *Helicobacter pylori* are in danger of being out of date almost as soon as they are published. Perhaps a short term compromise would be for the interested general practitioner to first read Dr Heatley’s little book to “get up to speed” on the subject and then look at the relevant clinical sections of the excellent supplement of *Gut* reporting on the 5th Education Training Workshop in *Helicobacter pylori* held in Bologna in 1998. They would find NJ Taylor’s article entitled “How should we manage the positive dyspeptic patients be managed?” particularly useful to balance out the rather negative views expressed by Dr Heatley in his book.

G D BELL


There is a great need to raise the profile of parasitic diarrhoeal disease, and this book serves the cause well. Wide world-wide prevalence coupled to the burden of diarrhoea is approximately 5%. The common notion that cryptosporidiosis is a purely a disease of the immunocompromised is wrong. Since the well publicised Milwaukee outbreak in July 1993, 420 000 individuals, large waterborne outbreaks of cryptosporidiosis repeatedly occur at an alarming rate despite “state of the art” water treatment facilities, illustrated by two examples. In 1998, some 2 million people became heavily contaminated with *Cryptosporidium* leading to a full scale enquiry by the Australian government. A large outbreak occurred in London and Hertfordshire in 1997, affecting a population of water users, resulting in the issue of a public notice to boil drinking water. Largely as a consequence, the government recently commissioned the Bouchier report on *Cryptosporidium* and water supplies which emphasised the need for better outbreak investigation in the future (www.dsi.detr.gov.uk/pubs/boucher).

In the developing world, parasitic disease contribute heavily to the burden of diarrhoeal disease. Malnourished children are especially at risk of increased morbidity and mortality, both HIV positive and negative, from cryptosporidiosis and microsporidiosis. Twenty to forty per cent of HIV positive individuals in the developing world develop cryptosporidiosis or microsporidiosis. In addition to slowing retroviral progression, HAART has been found most useful for opportunistic infections. Sadly few people with AIDS in the developing world have access to antiretroviral therapy. For these reasons Cryptosporidiosis and Microsporidiosis is a timely reminder of the importance of these infections providing an authoritative up to date summary of the many recent developments in the field. Franz Petry, the editor, has done well to bring together a panel of experts on an international reputation in their subjects.

Taipori and Widmer as well as Morgan and colleagues put forward evidence for two distinct genotypes of *C parvum*: a “human-type” which may infect only humans or immunocompromised animals and an “animal-type” which may infect both humans and a range of animals. This has important applications in the molecular epidemiological characterisation of samples collected during waterborne outbreaks. For example, almost all isolates tested from the London/ Hertfordshire waterborne outbreak were of human origin, suggesting failure of water treatment. Petry summarises the diagnostic approaches for the identification of *C parvum* infection. Particularly of interest is the recent development of ELISA for the detection of serum antibodies to *C parvum* immunodominant antigens. The technique appears to be both more sensitive and specific than ELISA using crude oocyst antigen but has yet to be fully evaluated. Farthing emphasises the clinical importance of childhood infection in the developing world and flags up new therapeutics, including nitazoxanide, which has good efficacy and is a feasible option in the tropics. McDonald and coworkers review developments in our knowledge of the host immune response to *Cryptosporidium* highlighting the role of T cell mediated responses. Work by the author has revealed the central role of interferon γ production by intraepithelial lymphocytes in the control of infection. Strong and Nelson tackle new developments in gene discovery for *C parvum*. Using a combination of characterisation of expressed sequence tags and the use of “HAPPY” mapping technology, approximately 30% of the *C parvum* genome has been surveyed. A full scale genome mapping project is needed to allow comparison with the better characterised related parasites *Toxoplasma* and *Plasmodium*.

Topics relating to microsporidiosis are simply covered. Weber and colleagues review diagnostic methods although information on the relevance of this infection in the tropics, where most disease now occurs, is limited. Our knowledge of the immune response to *Microsporidium* is relatively limited but with *Cryptosporidium*, Didier points out the importance of interferon γ mediated T cell responses in control of infections. Replaces describes the clinical importance of *Microsporidium* infection. Interestingly, several different genotypes of *Enteroxytoxozoon biaeuse* have been identified but their phenotype difference remains uncertain.

This book is an invaluable resource for workers with an interest in the field, my only regret, particularly for research students, is its hefty price.

R C G POLLOCK


This is a book that covers not only small intestinal disorders but also the anatomy and physiology of the normal small bowel. Absorption of nutrients is presented in a very detailed way. Although these aspects are very well dealt with, it is somewhat curious that in a book entitled Small Bowel Disorders almost 50% of the text is related to the anatomy and physiology of the small intestine. On the other hand, chapters on symptoms and signs of small intestinal diseases and on the use of the most important diagnostic tests will be of great help for clinicians. I was favourably impressed by the quality of the very interesting figures.

The book is particularly aimed towards tropical conditions affecting the small bowel. Many pages are specifically dedicated to infectious diseases and these are always kept in mind in the chapters describing diagnostic tests. In contrast, some non-infectious conditions are less extensively described. Only a few pages are dedicated to small bowel bacterial overgrowth, vascular disorders, radiation enteritis, and graft versus host disease, conditions that are relevant in the practice of...
gastroenterology in the western world. Nevertheless, the chapter on coeliac disease provides some practical information on following a gluten free diet that will be very useful not only for gastroenterologists but also for general practitioners and dieticians dealing with patients affected by coeliac disease. Patients too may find this chapter of great use. The chapter on Crolan's disease is up to date and interesting. Disappointingly, the use of ultrasonography in both the diagnosis and follow up of this condition is only briefly described.

The references are somewhat disappointing. Although in some chapters they are up to date, in others most date back to the 80s.

In conclusion, this book will be useful for clinicians with a specific interest in the small intestine. Otherwise, however, gastroenterologists may not find this book much more useful than the chapters dedicated to the small bowel in the major gastroenterology textbooks. Moreover, gastroenterologists working in tertiary referral centres for the small bowel may find some chapters out of date and not of much use for the most difficult decisions. Hence clinicians practising in the tropics or dealing with patients traveling in less industrialised countries are those that will benefit most.

F BIAGO

NOTES

Sir Francis Avery Jones British Society of Gastroenterology Research Award 2002
Applications are invited by the Education Committee of the British Society of Gastroenterology who will recommend to Council the recipient of the 2002 Award. Applications (TWENTY COPIES) should include:
- A manuscript (2 A4 pages ONLY) describing the work conducted
- A bibliography of relevant personal publications
- An outline of the proposed content of the lecture, including title
- A written statement confirming that all or a substantial part of the work has been personally conducted in the UK or Eire.

Entrants must be 40 years or less on 31 December 2001 but need not be a member of the Society. The recipient will be required to deliver a 30 minute lecture at the Annual meeting of the Society in Birmingham in March 2002. Applications (TWENTY COPIES) should be made to the Honorary Secretary, British Society of Gastroenterology, 3 St Andrews Place, London NW1 4LB by 1 December 2001.

Hopkins Endoscopy Prize 2002
Applications are invited by the Endoscopy Committee of the British Society of Gastroenterology who will recommend to Council the recipient of the 2002 Award. Applications (TEN COPIES) should include:
- A manuscript (2 A4 pages ONLY) describing the work conducted
- A bibliography of relevant personal publications
- An outline of the proposed content of the lecture, including title
- A written statement confirming that all or a substantial part of the work has been personally conducted in the UK or Eire.

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- A manuscript (2 A4 pages ONLY) describing the work conducted
- A bibliography of relevant personal publications
- An outline of the proposed content of the lecture, including title
- A written statement confirming that all or a substantial part of the work has been personally conducted in the UK or Eire.

An applicant need not be a member of the Society. The recipient will be required to deliver a 20 minute lecture at the Annual meeting of the Society in Glasgow in March 2002. Applications (TEN COPIES) should be made to the Honorary Secretary, British Society of Gastroenterology, 3 St Andrews Place, London NW1 4LB by 1 December 2001.

Falk Symposium No 123: VI International Symposium on Inflammatory Bowel Diseases
This Falk Symposium will be held on 3–3 September 2001 in Istanbul, Turkey. Further information: Falk Foundation e.V. – Congress Division, Leinenweberstr. 5, PO Box 6529, D-79041 Freiburg, Germany. Tel: +49 761 15 14 0; fax: +49 761 15 14 359; email: symposia@falkfoundation.de

Falk Symposium No 124: Medical Imaging in Gastroenterology and Hepatology
This Falk Symposium will be held on 28–29 September 2001 in Hannover, Germany. Further information: see Falk Symposium No 123 above.

9th Asian Conference on Diarrhoea Diseases and Nutrition
This meeting will be held on 28–30 September 2001 in New Delhi, India. The organisers hope the meeting will promote meaningful and effective collaboration among individuals/institutions towards control of the major health problems in Asia, particularly those affecting women and children. Further information: Professor M K Khan, Coordinator, Centre for Diarrhoeal Disease and Nutrition Research, All India Institute of Medical Sciences, New Delhi. Tel: +91 11 6963822; fax: +91 11 6862662; email: ascodd2001@rediffmail.com

VI Congress of the International Xenotransplantation Association
This congress will be held on 20–22 October 2001 in Valencia, Spain. Further information: Catedra Santiago Grisolia, Fundación Museu de les Ciències Príncep Felipe, Ciutat de les Arts i les Ciències, Avda. Institut Obeso, s/n, 46013 Valencia, Spain. Tel: +34 96 197 44 66; fax: +34 96 197 44 70; email: catedrasg@cac.es.

ICGH-2: The Second Iranian Congress of Gastroenterology and Hepatology
The main Iranian meeting of gastroenterologists and researchers in this field will be held on 27 October to 1 November 2001 in Tehran, Iran. Further information: Dr Shahin Merat, Digestive Diseases Research Center, Shariati Hospital, N. Kargar Street, Tehran 14114, Iran. Tel: +98 911 717 3966; fax: +98 21 225 3635; email: merat@ams.ac.ir; website: www.ams.ac.ir/icgh

Falk Symposium No 125: Cytokines in Liver Injury and Repair
This Falk Symposium will be held on 30 September to 1 October 2001 in Hannover, Germany. Further information: see Falk Symposium No 123 above.

Letters, Book reviews, Notes
Development of the Gastrointestinal Tract

L WEAVER

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