Morahan, have a wide range of pharmacological effects and toxicities, and as Dr Levy points out, the inducer, poly-ICLC, is an immune stimulant, whereas interferons are in general immunosuppressive.

Of the other chapters, that by Dr Billiau and Dr DeSomer provides an outstanding critique of what has been achieved by the use of interferon as an antiviral agent in animals and man, and what might be achieved. This should be required reading for any clinician with access to interferon. In contrast, the chapter on the antitumour uses of interferon is a disappointment. Other chapters deal with the production, purification and properties of human interferons, the stability and pharmacokinetics of interferons, and effects of interferon and inducers on the immune system. This latter is a useful account of what remains a very complicated field, even though the recent work on interferon as a stimulator of natural killer cells is only briefly mentioned.

As a reference source for the experienced interferon researcher (one of the avowed aims of the editor) this book will be useful. The other aim, to provide a work broad enough to be of value to the novice (surely incompatible with the first aim), has not been met. Moreover, in view of the price, this is a book that few will want to own, which is a pity because some excellent chapters will not be as widely read as they deserve. This is not a book for the non-specialist to buy, even though, like the curate's egg, parts are excellent.

N. B. FINTER

Hepatitis B virus and primary hepatocellular carcinoma


Primary hepatocellular carcinoma is a very common and important tumour, particularly among young males, in many regions of Africa, South-East Asia, China and Japan. The annual incidence is estimated as 350,000 cases. There is now compelling epidemiological and virological evidence of an aetiological association between hepatitis B virus and this tumour. Some of the evidence was thoroughly reviewed during a workshop that was organised by Professor Ph Maupas in April 1980 in Dakar. A few months later Philippe Maupas tragically lost his life in a motorcar accident.

The topics covered in this volume of the proceedings include studies on the epidemiology of primary hepatocellular carcinoma and hepatitis B infection in Senegal, South Africa, Taiwan and Greece, the localisation of hepatitis B viral antigens in liver tissue, integration of hepatitis B viral DNA sequences in the tumour tissue and studies on cell lines derived from hepatocellular carcinoma. The preparation of the 22-nm spherical particle hepatitis B vaccine in France is described, as well as the design of a vaccine field trial in Senegal and implementation of the programme among pregnant women and children under 2 years old for the prevention of perinatal infection and infection during infancy. There are also two useful papers on comparative epidemiology and pathogenesis of cancers associated with viruses in man and animals.

Although the exact mechanism of malignant transformation of hepatocytes in not yet known, infection with hepatitis B virus appears to trigger the chain of cellular changes. It should be noted, however, that other factors may play an important role in the aetiology of primary hepatocellular carcinoma, including genetic background, hormones, the immune response, nutrition and environmental carcinogens such as aflatoxin and other mycotoxins, chemical carcinogens and alcohol and apparently even cigarette smoking in hepatitis B-negative hepatocellular carcinoma.

Many readers, particularly those with less specialised knowledge, will regret that some of the interesting studies on the expression of hepatitis B virus by cloning the viral genome in eukaryotic and prokaryotic cells are described only in telegraphic form, although the details have been published elsewhere. A far less serious criticism is the extensive use by some authors of inconsistent or unconventional abbreviations. For example, PHC (primary hepatocellular
carcinoma) is also referred to as HCC (hepatocellular carcinoma) and hepatoma, and there are such sentences as “... ALC-associated OHC patients...” (ALC = alcoholic liver cirrhosis), and “... HBV infection in PHC correlates with detection of HBsAg, HBeAg and HBV DNA...”. There are worse examples, which add to the confusion.

Finally, several criteria that should be satisfied in arguing the case for an aetiological role for hepatitis B virus in liver cancer were outlined in 1974: is the virus the driver or the passenger?; infection must precede development of the cancer; tumour cells should contain virus-specific molecules or antigens; the tumour cells should produce the agent; the virus should transform cells in culture or induce the tumour in animals; and immunisation should lower the incidence of the cancer (Zuckerman, A. J., Cell, 1, 1974). By and large the first four criteria have now been met. Maupas devoted the last few years of his life to initiating a comprehensive programme for the prevention of liver cancer by active immunisation against hepatitis B. Successful immunisation will provide, in the absence of an available model, the crucial evidence for an aetiological association. Much of the work of Professor Maupas is described in this volume, which is a fitting tribute to his memory. This short book is strongly recommended reading for hepatologists and virologists.

A. J. Zuckerman

A colour atlas and textbook of the histopathology of mycotic diseases


The excellence of this atlas lies in the more than 600 colour plates illustrating the various features of the pathogenic fungi in histological section. However, it is also a textbook and begins with chapters entitled “The taxonomy of the fungi and classification of fungal and actinomycotic diseases”, “Histopathological diagnosis” and “Immunofluorescence diagnosis—current status”. There then follow concise chapters on actinomycosis, adiaspiromycosis, aspergillosis, blastomycosis, candidiasis, chromoblastomycosis, coccidioidomycosis, cryptococcosis, dermatophilosis, histoplasmosis, lobomycosis, mycetomas, mycotic keratitis, nocardiosis, paracoccidioidomycosis, phaeohyphomycosis, protothecosis and infections caused by morphologically similar green algae, rare infections, rhinosporidiosis, sporotrichosis, superficial and cutaneous mycoses and zygomycosis. Each chapter is accompanied by carefully selected key references.

There are a few minor criticisms. Thus, in the chapter on superficial and cutaneous mycoses, the authors state that “Twenty-seven different species of dermatophyte are currently recognized”, and table 1 includes *Trichophyton verrucosum* which is an important cause of cattle ringworm in Europe. On the other hand, in the chapter on taxonomy and classification 27 species of dermatophyte are listed, but here *T. verrucosum* is omitted and *T. soudanense* is included. The authors use the term candidiasis and state that “in the interest of clarity, brevity and uniformity we are coining the terms Histoplasmosis capsulati and Histoplasmosis farciminosi for infections caused by *H. capsulatum* var. *capsulatum* and *H. farcininosum*, respectively. The precedent for this nomenclature was set in 1964 by Cockshott and Lucas when they created the name Histoplasmosis duboisii for infections by *H. capsulatum* var duboisii”. However, the International Society for Human and Animal Mycology (Sabouraudia 1980, 18, 78–84) has recommended use of the terms candidosis for yeast infections by *Candida* spp. and classical histoplasmosis (American histoplasmosis) and African histoplasmosis for the diseases due to *Histoplasma capsulatum* and *Histoplasma duboisi*, respectively. In view of these recommendations, a disease name that is part vernacular and part specific epithet, from the latin name of the organism, is unlikely to find widespread acceptance.

I would like to have seen better illustrations of some of the cellular responses, but the deficiencies may be the result of the colour-reproduction processes used. Some of the plates show histological sections of fungi in animal tissues and the atlas will, therefore, also be of value to the veterinary pathologist.