word about such important antibiotics as moxalactam, ceftazidime or thienamycin (let alone the latter's exciting N-formimidoyl derivative).

The chapter on penicillins is distinguished from the others by the lack of a comparative chart on structural formulae to guide readers through the jungle of analogues and ever-proliferating derivatives. The discussion on penicillin dosage requirements is based on a dogmatically stated need "to maintain an effective concentration in the blood continuously" after dismissing tissue levels as largely irrelevant. There is, moreover, no mention of the persuasive arguments that have been advanced for "pulse-dosage" regimens of β -lactam antibiotics. Among many points of detail that merit comment, the statement that ampicillin produces "occasional gastric intolerance" is surely too bland; we look in vain for a discussion of "antibiotic diarrhoea"—not to be confused with pseudomembranous colitis, which is well discussed. Similarly, the supposed better absorption of flucloxacillin over cloxacillin is described without any mention of contradictory evidence from the manufacturers' own research work, nor of the poorer stability of flucloxacillin to staphylococcal β lactamase. The comparable drug nafcillin appears under the guise of "nafcillin", and cyclacillin is not given its (illogical) UK approved name of "ciclacillin"; likewise, "cefamandole" is described but not "cephamandole" (except in fig. 4.5)—although, as with *Staph. aureus* and "*Staph. pyogenes*", both "cefazolin" and "cephazolin" are used indiscriminately in the text (but only the former is indexed)!

More seriously, though, the earliest cephalosporins, cephaloridine and cephalothin, are still advocated for routine clinical use, despite the generally held view that both drugs should now be replaced by safer and more effective derivatives. The presentation of large arrays of MICs for cephalosporins (table 4.1) and for a wider range of antibiotics (table 14.1) against the main pathogenic bacteria has the semblance of useful comparative data; but this is totally misleading because the results are culled from numerous disparate studies. Moreover, caution is not advised in relation to, nor account taken of, important pharmacokinetic and other differences that greatly affect in-vivo activity. Arbitrary blood levels are, however, listed in table 14.1, but these are of total rather than free drug. The same applies to the drug concentrations found in bone (table 16.1).

Among errors that should be corrected are the statement that cefoxitin is only 20% protein bound (p. 108) whereas table 4.3 shows it more correctly to be 70% bound, the structural formula of amikacin (p. 130), the illogical remark that gentamicin urinary levels of 1 mg/ml are achieved "in the presence of renal impairment" (p. 145), and the comment that the sum of the FICs "of > 0.25 indicates synergy" (p. 485). The reader would also be helped if cefamandole were to be excluded from the section headed "New beta-lactamase-resistant cephalosporins", because the authors' own table 4.2 shows that this antibiotic is even more susceptible than cefazolin to the all-important type III (TEM) enzyme, as well as to type II among others. Also a note about the extraordinary enzyme susceptibility of cefaclor would be useful. As a general point, the headings need to be reorganised logically because they usually fail to indicate "rank"; for example, ANTIPSEUDOMONAL PENICILLINS and then UREIDOPENICILLINS are given in the same block capitals as the individual examples, AZLOCILLIN, MEZLOCILLIN AND PIPERACILLIN.

One of the most valuable features of the book is the almost 200-page-long section on treatment; this is a distillation of the authors' extensive experience. Readers will inevitably differ on matters of detail or may regret some omissions—such as ignoring the values of prophylactic erythromycin in close contacts of pertussis; but there is little to complain about in these particular chapters, nor in Miss Waterworth's concise section on laboratory control. Despite the disappointments and criticisms that have been expressed this book will undoubtedly form an essential feature of all clinical microbiology libraries. We can only hope that another 8 years will not elapse before an up-to-date sixth edition makes its appearance.

S. SELWYN

Microbiology of human skin

By W. C. NOBLE. 1981. Lloyd-Luke (Medical Books) Ltd, London. Pp. xii and 433. £25.00.

During the 9 years since the appearance of the first edition of this unique book, skin microbiology has emerged as an exciting subspeciality in its own right. Stimulated by Mary

Marples's pioneer work, *The ecology of human skin* published in 1965, a handful of enthusiasts have endeavoured to rectify the virtually total neglect by microbiologists of the most accessible—and arguably most fascinating—of our ecosystems. The achievements have been impressive. A mere decade ago the relatively scanty literature on the skin microflora contained alarming contradictions about such fundamental aspects as the exact nature and population size of the commensals, their location in the epidermis, the mechanisms limiting their proliferation and colonisation by potential pathogens, and the efficacy of disinfection procedures. Detailed information is now available on all of these aspects, and only the last two remain controversial.

The first quarter of this book reviews the physical and nutritional aspects of the skin as a microbial habitat and then considers the cutaneous microflora in general. Although now a central theme in skin microbiology, interactions among skin commensals and potential invaders are dealt with in only eight pages at this stage and are uncomfortably separated by more than 200 pages from the book's final section on "the ecology of the skin". The latter is, however, concerned mainly with the microflora of various skin diseases and at specialised sites, as well as with the effects of host factors and external agents on the flora. Discussion of the epidermal and microbial factors that control colonisation of the skin is scattered through several chapters, and perhaps the most important single item, desiccation or dryness, is not indexed.

This volume is now the most comprehensive single source of reference for the already vast accumulation of data, although the reader may be daunted by a generally dry presentation of research findings. When, as often happens in this subject, the modern literature contains apparently discordant results, the author tends to list them without the benefit of his well informed comment or any attempt to reconcile them. For example, after citing a report that the possession of antibiotic-producing skin commensals appeared to protect patients against superinfection of their dermatological lesions, he adds that his own work could not confirm this. He does not note, however, that the prevailing incidence of colonisation by pathogens among the patients he studied was considerably lower than in the earlier series; in such conditions any protective effect of antagonistic bacteria would tend to be minimised. Unfortunately, the situation is further confused by the author's erroneous statement that in the earlier study 14 (rather than 43) out of 51 patients who carried antibiotic-producing skin bacteria remained free from secondary colonisation.

Reservations about the organisation and presentation of the subject matter must not, however, be allowed to obscure the great importance of this book. Despite its high price it should find a place in every comprehensive library of medical microbiology.

S. SELWYN