BIOLOGY OF FARMED FISH. Kenneth D. Black and Alan D. Pickering (eds.). 1998. CRC Press, Boca Raton, Florida. ISBN 0-8493-9731-6. 415 p. $149.95 (hardbound). ENVIRONMENTAL IMPACTS OF AQUACULTURE. Kenneth D. Black (ed.). 2001. CRC Press, Boca Raton, Florida. ISBN 0-8493-0501-2. 212 p. $139.95 (hardbound).—The Sheffield Biological Series presents two companion volumes on aquaculture, the first a general overview of 12 different aspects of the field, the second, published three years later, focused specifically on the environmental impacts of the industry. In the preface of both books, the editors identify their intended audiences as those with a research or academic interest in the field as a whole. There is little doubt that there is a great need for a reliable text reviewing recent developments in aquaculture. Teachers in the field currently piece together a number of reviews from several sources for their classes, and academics and managers require a text that appraises complementary realms outside their main areas of expertise. The quality of each of the chapters in both books is generally high but, as is the case with most multiauthored volumes, variable. Consistency among chapters might have been improved if the authors had been provided with a standard format to follow. It is also very clear that the subjects covered relate to editorial interest. Biology of Farmed Fish covers 12 topics ranging from nutrition and reproduction to pathogens and genetics but does not cover subjects such as sensory systems, osmoregulation, and respiration. Environmental Impacts largely neglects issues outside Europe and relies on an overuse of common, instead of scientific, names for European species. Nevertheless, a reading of both books significantly improved our peripheral knowledge of subjects outside our fields.

Biology of Farmed Fish is organized around subjects rather than species and begins with a chapter on reproduction. The author identifies problems associated with maintaining reproductive broodstock in captivity and provides solutions such as environmental manipulation and spawning induction. However, despite these measures, the author points out that the complexity of the reproductive process continues to delay the addition of new species to farming. The next review, on early life stages, describes the development and culture of a wide range of primarily marine fish larvae. The chapter covers aspects such as rearing and feeding, optimization of environmental conditions, and cannibalism in a limited space. This is the first of several chapters that ends abruptly, without concluding remarks, and would have benefited from editorial intervention.

Feeding and nutrition in aquaculture are covered by two chapters, one focused on basic principles of fish nutrition and the second on lipid requirements. The first review addresses major feed-formulation issues of interest to the industry, such as replacement of fishmeal by alternative protein sources, the relationship between feed composition and farm effluent, and the impact of feed quality on product quality. The focus on general principles rather than on nutritional biochemistry is a welcome approach in a review volume, because a number of available books on fish and animal nutrition adequately cover the latter approach. The second chapter includes the enrichment of Artemia with fatty acids for use in larval-fish diets, the replacement of fish oil with vegetable oils in fish feeds, and the increase in fat content of feed. The section on high energy feeds required for Atlantic salmon serves to illustrate the rapid change in farming practices; in the four years since the book’s publication, lipid levels in some feeds have risen from 34% to over 40%.

The nutrition section is followed by three topics in the general area of fish health—parasites, immune defense systems in fishes, and stress avoidance in farming. One of the more serious omissions in the book falls within this subject area; there is no section on disease-causing agents other than parasites. The chapter on parasites of cultured fishes is sensibly organized