

EDITORIAL

Food from the sea

One hundred and thirty five years ago, when the Marine Biological Association was founded at a meeting at the Royal Society in London, it was agreed to establish a laboratory at Plymouth with one of the key aims being to support the improvement in the effectiveness of fishing industry through the ‘*investigation of the habits and organisation of the fisheries of our British waters*’ (Anon 1887). Such endeavor in an international context is still of prime importance today. Our world population is projected to exceed 9 billion by 2050 and the gap in potential protein production for this world population increase has been emphasized (Godfray *et al.* 2010). Over recent decades this has led to increasing exploitation of food from the sea with the global production of fish increasing eight-fold since 1950 (Béné *et al.* 2015). Both fishing and aquaculture has contributed to this increased production. The effect of human diet on production of greenhouse gas emissions and consequent effects on climate change has been highlighted (Tilman and Clark 2014). Diets including fish rather than other animal proteins ameliorate such emissions and fish also has excellent nutritional qualities giving even further impetus to increasing fish production (Tilman and Clark 2014, Béné *et al.* 2015).

However, concerns have been expressed regarding the sustainability of fisheries in terms of serial overexploitation of fish stocks. Possible strategies for dealing with this require improved knowledge of individual stocks and the food webs of which they are part (Pauly *et al.* 2002). Such information is provided in this issue for the edible rock oyster (*Saccostrea cucullata*) (Singh 2019), the white shrimp (*Litopenaeus schmitti*) (Silva *et al.* 2019) and the Japanese jack mackerel (*Trachurus japonicus*) (Sassa *et al.* 2019). Arrighetti *et al.* (2019) give insights into the foodweb which supports the fisheries of a sub-tidal sandy ecosystem of the Mar del Plata off Argentina. A further aspect of maintaining production from the sea has been increasing utilisation of previously less desirable species (Pauly *et al.* 2002). Balogh *et al.* (2019) provide valuable information of the reproductive biology of the sea cucumber *Stichopus herrmanni*. This ecologically important holothurian, in common with other similar species, is increasingly being exploited for the trade in ‘bêche-de-mer’.

Salmon farming is a well-researched and successful aquacultural enterprise. In this issue Kintner and Brierly (2019) document the effects on farmed fish of hydrozoan blooms on the north-west coast of Scotland, a previously unrecognised hazard to this longstanding industry. In contrast the abalone *Haliotis tuberculata* has traditionally been harvested from natural stocks. Recently, however, the species is being

farmed. Key to effective management of farmed animals will be a thorough knowledge of their physiology. Chapperon *et al.* (2019) provide us with detailed information on respiration, calcification and excretion rates of this newly domesticated species.

Thus in keeping with one of the original aims of the Marine Biological Association the Journal welcomes and continues to publish papers pertaining to the topic of ‘food from the sea’ both in respect of fishing and aquaculture research.

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Jane Lewis

University of Westminster,

115 New Cavendish Street, London W1W 6UW

email: lewisjm@westminster.ac.uk