

The pandemic significantly limited marine recording activity during 2020 as for long periods of the year, including the best low tides in the spring, non-local travel was prohibited and only those residing near the shore could reasonably travel there for exercise. Recreational diving was also prohibited for much of the year. The Society was able to run a single one-day field visit (to Bembridge on the Isle of Wight, led by Bas Payne) although the Marine Recorder was able to conduct a week's intensive surveying on Benbecula and the Uists in the Outer Hebrides during autumn spring lows.

For those fortunate enough to be within "daily exercise" distance of the shore, lockdown presented the opportunity to conduct some relatively intensive fieldwork over a small area. David Notton, in Edinburgh, was able to make regular excursions in the Granton area where he recorded a variety of molluscs including an intriguing LWB (little white bivalve) which was identified as the first Scottish observation of *Theora lubrica* Gould, 1861 (Notton, 2020). This non-indigenous species was mentioned in last year's report (Taylor, 2020) following its first UK discovery in Lowestoft Harbour as publicly reported last year in the Society's Journal (Worsfold et al., 2020). It has followed the increasingly familiar pattern of colonisation of continental Europe (in this case the Mediterranean first, before spreading around into the NE Atlantic) and then the UK, as well as establishing populations elsewhere around the globe. Although David's find was of a single valve it seemed relatively fresh; an establishing population in the vicinity of a busy harbour would come as no huge surprise. As illustrated in last year's report, the species, although small (c.10mm) and white is relatively easy to recognise by a distinct internal ridge running obliquely from the anterior side of the umbo in each valve (Worsfold et al. (2020) also provide excellent illustrations and description). It is certainly one to look out for.

Continuing with the recent tactic in this report of highlighting potential non-indigenous invasives before they have been recorded in Britain and Ireland, field workers should be aware of a recent find of a live *Yoldia limatula* (Say, 1831) in the Western Scheldt in the Netherlands (Driessen et al., 2020). The live specimen was found in a boxcore sample taken at a depth of 17.77 metres but this rather impressive bivalve***, native to the eastern seaboard of North America, grows to a length of some 5cm and would be readily recognised as unusual if encountered.

It is not only non-indigenous species which can spread suddenly. Many marine species found in Britain and Ireland have limited distributions here, such as the two native species of *Haminoea* – *H. navicula* (da Costa, 1778) and *H. hydatis* (L., 1758) – both of which are restricted to the southwest. At least that was the case until recently when two populations of *H. navicula* were discovered, evidently very recently established, in East Anglian estuaries (Taylor & Faasse, 2021). These populations will be monitored to establish their long-term viability and further surveys will be conducted seeking additional populations in other estuaries feeding into the North Sea, particularly those popular with leisure craft which have been speculated as the most likely dispersal vector.

Study into the biogeography of species with limited distribution in Britain and Ireland is topical, particularly as a potential indicator of climate change. Ian Smith has produced very detailed accounts of his research into the history of distribution of several such species, including the tortoiseshell limpet *Testudinalia testudinalis* (Müller, 1776), though to be retreating north, and a warmer water species, the trochid *Steromphala umbilicalis* (da Costa, 1778) which appears to be slowly colonising the colder waters of the North Sea (Smith & Taylor, 2020) (Smith, 2021a) (Smith, 2021b). As mentioned in previous years, Ian has numerous excellent species account available online via Flickr and is now also publishing detailed accounts in pdf format, currently available via www.researchgate.net. Society members continue to pursue literature research and field work focused on the current and historic extremes of distribution of many native species. Bas Payne has been conducting survey work on the south coast, specifically targeting *Patella depressa* Pennant, 1777 and *Phorcus lineatus* (da Costa,

1778), although surveys in the Exe estuary region have produced numerous interesting specimens of *Acanthocardia* sp., detailed investigation of which suggests that *A. aculeata* (L., 1758) is becoming more widespread in the southwest of England and in places may be present, alongside *A. tuberculata* (L., 1758), to the exclusion of the more familiar *Acanthocardia echinata* (L., 1758).

Two new species were confirmed for the UK marine mollusc species list in 2020, not by field work but by molecular research. Through DNA analysis, alongside detailed morphological and ecological study, this has followed the pattern of recent years of demonstrating that what were once thought to be distinct species are in fact multiple species. As well as presenting the challenge of having to learn how to differentiate the new species from those which they have been split, there is also the consequence that unless old records are supported by voucher specimens and/or photographic (or possibly, in some cases, ecological) evidence they have to be consigned to a species aggregate. The two new species, described from separate research, are both nudibranchs: *Amphorina andra**** Korshunova et al., 2020 and *Polycera norvegica**** Sørensen et al., 2020. Current research suggests that in Britain and Ireland both species are sympatric with those from which they have been split, respectively *Amphorina farrani* (Alder & Hancock, 1844) and *Polycera quadrilineata* (Müller, 1776). As is often the way with nudibranchs, even at what is a better defined species level there are multiple colour morphs within each species, making it difficult to briefly summarise how they are determined morphologically. Those interested are referred to the original descriptions and to the already growing body of online discussion and images.

The surveying visit to the Outer Hebrides (in the company of David McKay) had to be rescheduled from spring to autumn due to the Covid-19 pandemic. Consequently the number of opisthobranch records was disappointingly low, although other finds helped to make up for it. Personal highlights were live specimens of *Alvania beanii* (Hanley in Thorpe, 1844) and *Pyrgiscus rufescens* (Forbes, 1846) found intertidally under stones at the north end of the Eriskay causeway. Benbecula and the Uists are renowned for brackish lochs and the presence of *Hydrobia acuta neglecta* Muus, 1963 *** was confirmed at a number of sites, primarily those lochs on the more saline side of brackish where the species was found on marine algae alongside other molluscs such as *Littorina saxatilis* (Olivi, 1792), *Rissoa parva* (da Costa, 1778) and *Skeneopsis planorbis* (O. Fabricius, 1780). Some care was required however because, as is often the case, some sites were also inhabited by *Ecrobia ventrosa* (Montagu, 1803), particularly where the salinity was lower. As the salinity declines *H. a. neglecta* gives way entirely to *E. ventrosa* which then itself cohabits with *Potamopyrgus antipodarum* (Gray, 1843) until, in only very slightly brackish to fresh water, the latter species is the sole hydrobiid present. The hoped-for lagoon slug *Tenellia adspersa* (Nordmann, 1845) was not found, though this may simply have been an unfortunate consequence of the time of year.

Often these brackish lochs are separated from the open sea by narrow tidal straits, classic habitat for rich biodiversity. The characteristic indicators - dense sponge and tunicate growth - were frequently encountered, accompanied by a molluscan fauna dominated at ELWST by *Calliostoma zizyphinum* (L., 1758), both species of *Trivia*, *Talochlamys pusio* (Linnaeus, 1758) - more familiar to many as *Chlamys distorta* (da Costa, 1778) - as well as *Hiatella arctica* (L., 1767) and anomiids. *Emarginula fissura* (L., 1758), *Diodora graeca* (L., 1758) and the chiton *Leptochiton asellus* (Gmelin, 1791) were also found in good numbers in these habitats.

A couple of dredging trips off Benbecula were possible, one to the west on the Atlantic side (out of the appropriately named Stinky Bay) and one to the more sheltered eastern side. The latter was by far the most productive, providing records of such species as *Azorinus chamasolen* (da Costa, 1778), *Thracia convexa* (W. Wood, 1815), *Yoldiella philippiana* (Nyst, 1845) and *Nuculana minuta* (Müller, 1776), among many others.

During 2020 the most productive source of new records was iRecord, which is proving particularly popular with “casual” recorders and provides them with the opportunity to have their finds verified by experts. Thanks largely to Ian Smith, who continues to contribute a significant amount of verification effort, approximately 1,000 records for the year were verified as correct. 5,172 previously verified records were also uploaded to the marine dataset during 2020. This data is particularly useful inasmuch as it tends to provide wide coverage of many of the commoner species, and for records from inexperienced or new workers to be verified as correct it has to be supported by evidence, usually photographic.

The project focusing on digitising the Society’s archive of paper-based records also continued to grow during the course of the year, although lockdown provided a good opportunity for such activity. Volunteer digitisers Brian Goodwin, Andrew Wright and Val Marshall between them typed-up several thousands of records which can now be made publicly available via the Society’s digital dataset and the NBN Atlas. The Society offers its thanks to those digitisers; if anybody else is interested in taking part in the project then please do feel free to volunteer as there is always room for more.

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