Marine Recorder's report 2024

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The undoubted highlight of the year occurred early with the report, in January, of a species not only new to southern Britain but new to science: *Pleurobranchaea britannica* Turani *et al*., 2024 (figure 1). It was recognised as unusual when first taken almost simultaneously in samples off south-west Britain and in the Gulf of Cadiz in 2018–19. Detailed morphological and molecular work ensued, confirming the initial conclusion and resulting in the species' description. In the interim, further specimens had been found demonstrating a current known local distribution around Brittany and south-west England, up towards southern Ireland (Barry *et al*. 2024a).

The species is shell-less, typically 2–5 cm in length, with the often-prominent side-gill and the characteristics of the head making determination uncomplicated. So has it been hiding in plain sight? More likely it has recently experienced a northern range extension and further south had not been differentiated from the more southern species *P. meckeli* (Blainville, 1825). In their 2024 paper, Turani *et al*. did not speculate on this subject although work is ongoing in an effort to find specimens in the distribution gap between Brittany and the Gulf of Cadiz (Cefas 2024).

The discovery, which even made the TV and radio news, demonstrates there is still much to be found even in areas which have already been well studied. It also highlights the value of the regular routine survey work carried out by ships such as the RV *Cefas Endeavour* and of having such experienced and knowledgeable scientists working on those vessels.

figure 1: *Pleurobranchaea britannica* Turani *et al.*, 2024, off south-west England. (photos: Ross Bullimore, Cefas)

Another potential new species to Britain and Ireland, although not new to science, is the pteropod *Cuveriana columnella* (Rang, 1827). David McKay found a specimen of the characteristically flask-shaped shell in a benthic sample taken south of Rockall Bank. I have yet to see the actual specimen but if David is correct then it may well also prove to be the northernmost discovery of this species, despite its very widespread distribution.

Identifying and assessing the risk from potentially invasive 'horizon' species is very much in vogue scientifically at the moment. Back in its 2020 version, this report (Taylor 2021) highlighted the recent discovery in the Netherlands of thriving populations of the impressive and very characteristic protobranch *Yoldia limatula* (Say, 1831) (figure 2). This turned out to be even more prescient than imagined as a benthic baseline survey in the Tees estuary in November 2020 found the species, remarkably, in 18 of 19 grab samples spread quite widely across a 3 km stretch of the narrow part of the estuary at depths of between 3.4 and 10.3 m (Barry *et al*. 2024b). The estimated age range of the 257 specimens found in the samples suggested the population had been established for up to four years. It is likely to have arrived as larvae in ballast water, the southern part of this section of the Tees being occupied by Teesport, one of the busiest commercial ports in the UK.

Yoldia limatula seems to be succeeding with introduction by this means as another large population has now been discovered in Southampton Water. Initial reports were followed by something of a flood from benthic invertebrate surveys in a quite environmentally stressed shipping area (Jenny Mallinson, Robin Somes, pers. comm.). Given the apparent age of some of the specimens (figure 2) it could be extrapolated that the species has been present for at least four years. However, in their report Barry *et al*. (2024b) noted a 2019 survey in the Tees estuary (Page *et al*. 2021) which mentioned '*Yoldia* cf. *hyperborea'* which could possibly be juvenile *Y. limatula*, although apparently no vouchers were kept to enable this to be investigated further. Notably, Page *et al*. (2021) also included in their lists another recent invasive bivalve, *Theora lubrica* Gould, 1861, adding another site to the range of that species in Britain.

Continuing the theme of invasive non-native species (INNS), *Potamocorbula amurensis* (Schrenck, 1861) (figure 3) has been on lists of 'horizon' species for some time, having successfully spread from its native South-East Asia to San Francisco Bay, California, in the 1980s and, more recently, to Belgium, France and the Netherlands (Dumoulin & Langeraert 2020, Latry *et al*. in press). Ballast water is again thought to be the primary vector, although once introduced to a new region it is likely to spread locally as it readily attaches byssally to various items and can be dispersed with them, according to the National Exotic Marine and Estuarine Species Information System (NEMESIS 2024). The California experience is that the species can quickly establish dense

figure 2: *Yoldia limatula* (Say, 1831), Southampton Water.
(photos: Jenny Mallinson)

populations and filter feed so effectively as to have potentially damaging effects on phytoplankton densities. Following reports of finds in benthic surveys of the Outer Thames Estuary in 2023, further investigation in 2024 found sufficient numbers to suggest the species is established (Fletcher 2024). Although it grows much larger, smaller specimens of *P. amurensis* can be confused with the native *Varicorbula gibba* (Olivi, 1792) so genetic confirmation is being sought. There seems very little doubt that *P. amurensis* is with us, so we have another INNS to monitor.

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figure 4: *Potamocorbula amurensis* (Schrenck, 1861).

Looking briefly at the distribution of a few other INNS:

- The Asian date mussel *Arcuatula senhousia* (Benson, 1842) has not spread rapidly as initially feared but does appear to be expanding its range, with numerous specimens found by Bas Payne at Arne in Poole Harbour, well west of the core population in the Solent and Southampton Water.
- The Manila clam *Ruditapes philippinarum* has expanded its range here far more quickly, steadily working its way around the English shore both clockwise and anticlockwise from its south-east stronghold as well as popping up occasionally around Scotland or Ireland. Care has to be taken to avoid confusion with *R. decussatus*, often impossible if records are based purely on photographs of the shell exterior. Welsh specimens are now being reported with some regularity, with confirmed records from Pembrokeshire and from the Society's 2024 marine week on Anglesey.
- The American razor *Ensis leei* Huber, 2015 (known for several years as *E. directus* (Conrad, 1843)) has for some years been very well established in the North Sea and Eastern English Channel. It also has a strong population in the north-west from Anglesey up to Lancashire but has evidently been absent from the West Country. A few claims have been made but nothing convincing until summer 2024 when Paul Dansey discovered a specimen on Pendower Beach in Gerrans Bay, southern Cornwall. Incidentally, Iceland was considered *Ensis*-free until recently when it was colonised by another American species: *Ensis terranovensis* Vierna & Martínez-Lage, 2012. In parts of its native range it is sympatric with *E. leei* and the two can be notoriously difficult to tell apart. It is thought the Iceland specimens originated from expelled ballast water, recognised as the original vector through which *E. leei* arrived in Europe, so there is a possibility that *E. terranovensis* may be here already, hiding in plain sight.

Not all INNS are bivalves of course. As long ago as 2019 attention was being drawn to the potential arrival of the muricid *Ocinebrellus inornatus* (Récluz, 1851) (figure 4) which was already well-established on shores just across the English Channel (Taylor 2020). As an intertidal and shallow water species which breeds via egg capsules attached to rocks from which emerge non-pelagic young, it has yet to cross that body of water, as far as is known. The species can be morphologically similar to the native *Ocenebra erinaceus* (L., 1758) and some argue *O. inornatus* may already be here, again hiding in plain sight. In the author's opinion, the two species are sufficiently different for *O. inornatus to* have been recognised were it in Britain, although admittedly muricids traditionally present an identification challenge to the inexperienced (exemplified by the regular trickle of incorrect records of *Urosalpinx cinerea* from areas well outside that species' limited range). The egg capsules are perhaps more recognisable than adult specimens, hence there was much excitement early in 2024 when clumps of capsules were stranded on a beach in East Sussex. They had been tentatively identified as *O. inornatus* from photographs, although admittedly quite eroded, and prompted a springtime multi-agency hunt for intertidal specimens of the animal. The author participated and although the search was fruitless – dead *O. erinaceus* and live *Nucella lapillus* (L., 1758) were the only muricids found – it was an excellent opportunity to boost the

Society's profile with several agencies and to raise awareness, not just of *O. inornatus* but of related species which are already resident in our coastal waters.

figure 4: *Ocinebrellus inornatus* (Récluz, 1851), Gorishoek, Netherlands.

Focusing briefly on Scotland, Society member and RSPB ecologist Clive Walton has been making several molluscan discoveries north of the border. These include a confirmed population of the dun sentinel *Assiminea grayana* (Fleming, 1828) in the upper reaches of the Firth of Forth (Walton 2024). This species, primarily a salt marsh inhabitant, has been spreading rapidly around our coast over recent decades, previously having been largely restricted to the south-east. As yet the vector(s) behind this remain unspecified. Clive's record is understood to be the northernmost record of the species globally and a first for eastern Scotland, other than a 19th-century specimen in the National Museum Cardiff, from Brora on the northern side of the Moray Firth, which is believed to evidence a failed attempt to introduce this and other species by the Victorian conchologist William Baillie (Rowson 2021).

Other Scottish highlights focus on rare/unusual Pectinidae and stalwart recorder David McKay. The 'rare' is *Karnekampia sulcata* (Müller, 1776), of which David found a specimen from a large chunk of coral which was trawled up from way out in the middle of the North Sea. David has had a few specimens of this in recent times; it is described as 'rare' (Alf *et al*. 2020, Ghys 2024) but this is most likely merely an artefact of its preference for deep water habitat. The 'unusual' was something I have certainly not seen before, and I don't think David has either: an adult *Pecten maximus* (L., 1758) lacking any primary ribbing (figure 5). The specimen was caught by a commercial scalloper off Rhum in the Hebrides and brought to David's and then my attention. Both valves are quite typical of the species except they lack the primary coarse radial ribbing, exhibiting just the fine secondary radial ribbing. A truly spectacular specimen. Incidentally, David also found some unusual deep water naticids in 2024, from way out beyond the Porcupine Seabight, but we have not been able to confidently identify them yet: possibly *Polinices subplicata* (Jeffreys, 1885).

figure 5: Unusual *Pecten maximus* (L., 1758), off Rhum, Hebrides, Scotland. (photos: courtesy of David McKay)

Despite several westerly gales there were no major molluscan Transatlantic rafting headlines in 2024, although nowadays every year seems to bring a good number of specimens. Western shores continue to intercept flotsam items, the interesting ones usually being plastic and associated with the fishing industry. Stephen Green found two such items on his local beach on the Hampshire coast which yielded a large number of juveniles of west Atlantic bivalves. Often a little detective work can help to pin down the origin of an item which has crossed the ocean. Anna Holmes at the National Museum Cardiff, who has been researching these rafters in recent years, did just that regarding a plastic crate stranded at Freshwater West in Pembrokeshire, and discovered that 'Parbo Bier' is the national brew of Suriname (figure 6). The crate yielded numerous bivalve species which had drifted across attached to it, all dead, including *Hyotissa* cf. *mcgintyi* (Harry, 1985).

figure 6: Surinamese beer crate and the molluscs which drifted across the Atlantic attached to it. (photo montage: Anna Holmes, National Museum Cardiff)

New Data

Although directly submitted records are always very welcome, the bulk of new data continues to flow via the online facilities iRecord (iRec) and iNaturalist (iNat). Last year saw something of a change in the balance of power: whereas iRec has always proved the more popular method by which observations are verified by the Society's experts, in 2024 it was overtaken by iNat. In truth, the quality of data tends to be better on iRec so whereas all available marine mollusc records there are verified by the Society, we tend to pick and choose those which are verified on iNat. Nevertheless, in 2024 iNat (3000 records) outstripped iRec (600 records) by a factor of five!

Each year at this point huge gratitude is extended to Ian Smith, who performs the bulk of the verification on both systems. The 2024 numbers demonstrate very nicely the level of commitment required, totalling roughly ten per day. That may not sound much but they can sometimes involve considerably more than merely ticking a box. Plus, one only has to miss a few days for whatever reason and a backlog quickly develops; I speak from experience! It is also mentioned every year in this report that if you have any interest in British marine Mollusca then you should definitely look up Ian's online species accounts, which contain a wealth of carefully researched detail. They are available via ResearchGate or in the MarinVert section of the Senckenberg Institute's website which can be found at https://marinvert.senckenberg.science/.

Adventives

There was the usual trickle of reports of shells of species from other areas making mysterious appearances around our coast. Carl Roscoe was sorting some shell grit collected near Ardnamurchan when he came across a *Pusia granum* (Forbes, 1844), a Mediterranean columbellid. Carl admits that he and his brother process Mediterranean samples from time to time but they had not done so recently. It is impossible to rule out contamination of the sample but a fresh-looking *P. granum* shell in Arnamurchan is no more odd than many of the other adventives reported.

The Society was contacted in September 2024 by Leo FitzWalter who beachcombs with his son Rory and had found a shell they did not recognise at Dale in Pembrokeshire. The photographs supplied showed a subadult specimen of *Cabestana* Röding, 1798 (figure 7), almost certainly the east Atlantic species called *C. dolaria* (L., 1767) or *C. cutacea* (L., 1767), depending on which reference you believe. The species' range extends as far north as Brittany but it varies considerably over its range and the specimen found is more characteristic of those from south-west Africa. Again it is a noteworthy find.

figure 7: *Cabestana cutacea/dolaria* (L., 1767) found at Dale, Pembrokeshire. (photos: Leo FitzWalter)

Incredibly, later on the same trip and on the same shore, Leo and Rory found another out-of-context specimen, this time an apparently mature *Stramonita haemastoma* (L., 1767), although the specimen was broken and worn. This is a potential rafting species, but the find was not associated with any flotsam. It has a wide distribution and is also known from the aquarium trade. One can only speculate, although this species is already noted as a possible coloniser as specimens have been found alive after having rafted across the Atlantic, as noted in several past editions of these reports.

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