Bulletin of the Irish Biogeographical Society **Number 44** (2020)

FIRST RECORDS OF STRANDED NUTNEGS *MYRISTICA FRAGRANS* HOUTTUYN, 1774 (MAGNOLIALES: MYRISTICACEAE) ON THE IRISH COAST AND A REVIEW OF NORTH ATLANTIC RECORDS

*Declan T. G. Quigley[1], Liam MacNamara[2] and Paul A. Gainey[3]
[1]*Sea Fisheries Protection Authority, Eastern Region, West Pier, Howth, Co. Dublin, Ireland.*
[2]*Derreen, Craggagh, Fanore, Co. Clare, Ireland.*
[3]*Polwithen Road, Penryn, Cornwall TR10 8QT, U.K.*
*Corresponding author e-mail: <declan.quigley@sfpa.ie>

Abstract

Between July and October 2019, LMN discovered a total of 23 nutmegs *Myristica fragrans* Houttuyn, 1774 stranded at various locations along the shoreline of County Clare, on the Atlantic coast of western Ireland. The specimens represent the first records of stranded *M. fragrans* seeds from Irish waters. The occurrence and potential provenance of stranded nutmegs on Irish and North Atlantic maritime shores are reviewed. Flotation experiments suggest that some stranded nutmegs may represent true peregrine trans-Atlantic drifters while others may have been locally discarded.

Key words: Nutmeg, *Myristica fragrans*, stranded nutmegs, Irish waters and North Atlantic.

Introduction

The pantropical family Myristicaceae consists of c.21 genera and c.520 species of woody trees, shrubs and, occasionally lianas (Cristenhusz and Byng, 2016; Santamari-*Aguilar et al*., 2019). *Myristica* is a genus of trees native to tropical Asia and the Western Pacific. Although at least 446 species and sub-species of *Myristica* have been described (Anon., 2020a), the identification of *Myristica* species based on traditional morphological criteria has always proven difficult, and so far, even DNA barcoding techniques based on *rbcL* and *mat*K genes have generally failed to satisfactorily differentiate between species (Tallei and Kolondam, 2015; Nanlohy *et al*., 2017; Swetha *et al*., 2019). However, recent studies using whole chloroplast genome sequences have proven more successful (Cai *et al*., 2019; Mao *et al*., 2019; de Oliveira *et al*., 2020).

Meanwhile, the taxonomy of *Myristica* is still in a state of flux. Anon (2020b) listed a total of 175 accepted species, whereas Anon (2020a) considered that only nine of these were valid: *M. fragrans* Houtt. (Indonesia: Banda Islands, Malucu), *M. cagayanensis* Merr. (The Philippines), *M. glomerata* Miq. (Sri Lanka), *M. ingens* (Foreman) W.J.de Wilde (New Guinea), *M. philippensis* Lam. (The Philippines), *M. quercicarpa* (J.Sinclair) W.J.de Wilde (Indonesia,

Malaysia, Papua New Guinea and The Philippines), *M. rumphii* (Blume) Kosterm. (Indonesia: Lesser Sunda Islands and Maluku, and The Philippines), *M. simiarum* A.DC. (Taiwan and The Philippines), *and M. yunnanensis* Y.H.Li [China (S. Yunnan) to Thailand]. Using morphological criteria, Govind *et al*. (2020) recently described a new species of *Myristica* (*M. trobogarii*) from the southern Western Ghats in India.

Ecology and distribution of *Myristica fragrans*

Myristica fragrans is a dioecious evergreen tree, usually 5-15m tall, but occasionally reaching 30m, indigenous to the Moluccas (Spice Islands) of Indonesia. It grows wild on rich volcanic soils in lowland tropical rain forests. Its cultivation as a crop is largely confined to islands in the hot, humid tropics at altitudes up to 4,500m (Purseglove, 1968).

M. fragrans trees produce smooth yellow ovoid or pear-shaped fruits with a fleshy husk, 60-90mm in length and 35-50mm in diameter. When ripe the husk dehisces into two halves along a ridge running the length of the fruit. Inside is a single purple-brown shiny seed, 20-30mm in length and about 20mm in diameter, covered by a red or crimson aril. The seed is the source of nutmeg spice and the aril, the source of mace. Apart from its culinary uses, many other derivatives of *M. fragrans* have a wide range of ethno-medicinal, pharmacological, and cosmetic properties (Daniel, 1994; Thangaselvabai *et al*., 2011; Hetharie *et al.*, 2015; Nagja *et al*., 2016; Smith, 2018; Ibrahim *et al*., 2020).

Commercial cultivation of Nutmegs (*Myristica fragrans*)

Since the 1770s, *Myristica fragrans* has been widely introduced as a commercial crop into several tropical areas worldwide, including SE Asia (Australia, China, Taiwan, Thailand, Malaysia, Singapore, Papua New Guinea and The Philippines), Central Pacific (Cook Islands, Federated States of Micronesia, French Polynesia and Samoa), Indian Ocean (Bangladesh, Comoros, India, Madagascar, Mauritius, Mayotte, Reunion and Sri Lanka), Africa (Angola, Benin, Cote d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Ghana, Nigeria and Tanzania,), South America (Brazil, Columbia, Guyana, Peru, Suriname and Venezuela), Central America (Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama), and many Caribbean Islands (Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Jamaica, Martinique, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, US Virgin Islands and, Trinidad and Tobago) (GBIF, 2019; Cadée and Kruiswijk, 2004; Zumbroick, 2005).

According to FAO statistics, a combined total of 109,283 tonnes of nutmeg, mace and cardamom (*Amonum* spp. and *Elettaria* spp.) were produced by 21 countries worldwide during 2018 (Anon., 2019). However, three of these countries accounted for over 83% of total

production: Guatemala (35%), Indonesia (33%), and India (15%). The combined production from the Caribbean region (Dominica, Guatemala, Grenada, Honduras, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago) accounted for 36.5%.

Nutmegs (*Myristica fragrans*) stranded on Irish and NW European maritime shores

Between July and October 2019, LMN discovered a total of 23 nutmegs stranded at various locations along the shoreline of County Clare, on the Atlantic coast of western Ireland (Plates 1-2). The specimens represent the first records of stranded *Myristica fragrans* seeds from Irish waters. Details on all known stranding records from NW European maritime shores are summarized in Table 1.

There are only ten previous reports of stranded nutmegs on NW European maritime shores, including three from Scotland (Outer Hebrides), six from England (Cornwall), and one from the Netherlands (Zandvoort). The earliest known records, three dating from 1900-1919, were discovered on the Isle of Barra, in the Outer Hebrides, off the west coast of Scotland. Almost a century later, single specimens were reported from the Dutch coast and Cornwall during 2004 and 2008 respectively. It is interesting to note that five of the Cornish specimens were recorded during 2013 (Plate 3) which suggests that there may have been a relatively large influx of nutmegs in southwest England during that year, and an even larger influx on the western Irish coast during 2019. The maximum length and width of the NW European nutmegs ranged from 20-30mm and 19-25mm respectively. The vast majority of the nutmegs stranded on NW European shores were recorded between July and December.

Nutmegs (*Myristica fragrans*) stranded on western North Atlantic maritime shores

Stranded nutmegs have been found over a wide maritime area in the western North Atlantic, ranging from Mexico (Yucatan Peninsula), Texas (Padre and Mustang Islands), and Florida, as far north as North Carolina (Cape Hatteras) (Gunn and Dennis, 1973; Gunn *et al*., 1976-1982; Perry, 2000; Sullivan, 2003; Norton, 2008; Perry and Dennis, 2010). Although these stranded nutmegs were generally considered to be *Myristica fragrans*, it was acknowledged that nuts belonging to other genera of Myristicaceae may also occur on western North Atlantic shores (Gunn *et al*., 1999; Sullivan *et al*., 2008; Perry and Dennis, 2010; Witherington and Witherington, 2017). For example, Ucuhuba [*Virola surinamensis* (Rol. *ex* Rottb.) Warb. (*Myristica surinanensis* Rol. *ex* Rottb.)], a heavily buttressed tree up to 35m tall, which is common in swamp and marsh forests along rivers and creeks from the Guianas (northern coast of South America) to Costa Rica on the Caribbean coast of Central America (van Roosmalen, 1985), produces seeds which are morphologically similar to *M. myristica* (Smith and Wodehouse, 1937; Gurgel *et al*., 2006; Santamaría-Aguilar *et al*., 2019). Beerensson (2009)

also noted that stranded Lantern Tree (*Hernandia sonora* L.) seeds are often confused with small nutmegs.

Discussion

Nutmegs are primarily dispersed by animals, particularly by birds (Hemsley, 1885; Guppy, 1906; Ridley, 1930; Howe and Vande Kerckhove, 1980; Howe and Miriti, 2004; Moreira *et al.*, 2017; Freitas *et al.*, 2018), but some may also be dispersed by water (hydrochory), at least secondarily. Ridley (1930) speculated that some fallen nutmeg seeds may be dispersed by forest streams, but are unlikely to survive long immersion in seawater. Guppy (1906) observed unopened nutmeg fruits floating in seawater off the Solomon Islands, but after dehiscing, the ripe seeds sank. He also noted that the seeds of two nutmeg species in Fiji only floated for 3-7 days. Cadée and Kruiswijk (2004) noted that the single stranded nutmeg recorded from Zandvoort (Western Netherlands) only remained afloat in seawater for nine days.

It has been suggested that nutmegs stranded on NW European shores are most likely derived from shipwrecks, lost cargo, or locally discarded (Nelson, 2000; Cadée and Kruiswijk, 2004). Indeed, one nutmeg was discovered on a ship wrecked around 1658 off the Dutch coast (Cadée and Kruiswijk, 2004). The authors speculated that nutmegs from shipwrecks might be transported along the sea bottom towards the coast by waves and currents in the same way that most shells, which also cannot float, are transported on to maritime beaches. However, long term immersion in water (either fresh or seawater), particularly in potentially anoxic benthic environments, is likely to lead to gradual bacterial decay of the endosperm and the release of gases which might result in some level of temporary buoyancy; empty nutmegs may have greater flotation properties than whole nutmegs.

Whole retailed nutmegs have been reported to sink immediately like stones (Nelson, 2000; Cadée and Kruiswijk, 2004), and similar results were observed by DQ with both whole and broken nutmegs of Indonesian origin purchased from two Irish retail outlets. It is interesting to note that commercially harvested nutmegs are routinely sorted on the basis of their flotation properties; ‘sinkers’ are marketed while ‘floaters’ are discarded (Daniel, 1994). Perhaps some of these ‘floating discards’ find their way into the sea and are dispersed by oceanic currents?

After having been stored dry for almost 12 months up to 75% of the stranded County Clare nutmegs immediately sank when placed in either fresh or saltwater, and the remainder sank over the following three days, which strongly suggests that they were of retail origin and most likely locally discarded. Indeed, it was clear that the endosperm was fully intact in one of the stranded nutmegs (Plate 2).

Nevertheless, Nelson (2000) noted that seawater flotation tests on nutmegs stranded in the western North Atlantic indicated that at least some can float for up to 4.5 years, which prompted

Gainey (2014) to suggest the possibility that some nutmegs might be capable of drifting across the Atlantic *via* the Gulf Stream and North Atlantic Drift to NW European shores, within the estimated minimum time interval of 14 to 18 months (Quigley *et al*., 2016). Perhaps these long term 'floaters' were derived from commercially discarded nutmegs in the Caribbean region? Indeed, it is interesting to note that after seven years in dry storage, each of the five nutmegs found stranded in Cornwall during 2013 remained afloat during recent, albeit short-term seawater flotation tests. PAG noted that the Cornish nutmegs were partially empty (endosperm remains 'rattled' inside), and the surface was significantly worn compared with those from County Clare.

Considering the observed long-term flotation properties of nutmegs stranded in the western North Atlantic (4.5 years), it is conceivable that some of the nutmegs stranded on NW European shores, particularly those found in Cornwall during 2013, may represent true peregrine trans-Atlantic drifters, possibly commercial discards ('floaters') from the Caribbean region which currently accounts for 36.5% of global production.

Although it is possible that genetic analyses may reveal the provenance of stranded nutmegs, they are unlikely to explain the mechanisms as to how they arrived on maritime shorelines, perhaps several thousand miles from where they were originally harvested. Considering the widespread cultivation and international trade in *Myristica fragrans*, it is possible that stranded nutmegs could be derived from several different tropical regions in either the Old or New World. If genetic techniques revealed that the County Clare nutmegs were of Caribbean origin, it might lend some support to the peregrine hypothesis, but considering their poor flotation properties, they were most likely locally discarded.

Acknowledgements

We are grateful to the following for their help: Ed Perry (Melbourne Beach, Florida, U.S.A.) for confirming the identity of the current specimens, Chilekwa Chisala (Vlaams Instituut voor de Zee vzw Flanders Marine Institute, Oostende, Belgium) for sourcing references, Guinevere Barlow and Fiona Marwick (West Highland Museum, Fort William, Scotland) and Melia Knecht (King's Museum, University of Aberdeen, Scotland) for details on MacGillivray's specimens, Jane Darke and Chris Easton (Cornwall, U.K.) for permission to include details about their unpublished records, and Gerhard Cadée (Royal Netherlands Institute of Sea Research, Den Burg, Texel, Netherlands) for his helpful comments.

References

Anon. (2019) FAOSTAT. <http://www.fao.org/faostat/en/#data/QC>

Anon. (2020a) The Pant List - a working list of all plant species. <http://www.theplantlist.org/tpl/search?q=myristica>

Anon. (2020b) Kew Science - Plants of the World Online. <http://www.plantsoftheworldonline.org taxon/urn:lsid:ipni.org:names:331788-2>

Beerensson, J. (2009) The Lantern Tree. *The Drifting Seed* **15**: 4.

Cadée, G. C. and Kruiswijk, W. (2004) Can they float? A Nutmeg *Myristica fragrans* from the Dutch coast. *The Drifting Seed* **10**: 5-6.

Cai, C.-N., Ma, H., Ci, X.-Q., Conran, J. G. and Li, J. (2019) Comparative phylogenetic analyses of Chinese *Horsfieldia* (Myristicaceae) using complete chloroplast genome sequences. *Journal of Systematics and Evolution* <https://doi.org/10.1111/jse.12556>

Cristenhusz, M. J. M. and Byng, J. W. (2016) The number of known plants species in the world and its annual increase. *Phytotaxa* **261**: 201-217.

Daniel, S. (1994) *Nutmeg and derivatives*. FO:MISC/94/7 Working Paper. Food and Agricultural Organisation of the United Nations, Rome. 107pp.

De Oliveira, S. M., Duijm, E. and ter Steege, H. (2020) Chloroplast genome of the nutmeg tree: *Myristica fragrans* Houtt. (Myristicaceae). *Biology* <https:// doi.org /10.1101/ 2020.02.25.964122>

Freitas, T. M. S., Consolacao Almedia, V. H., Fogaca, L. and Montag, A. (2018) Evidence of seed dispersal of *Virola surinamensis* (Myristicaceae) by a catfish in Eastern Amazonia, Brazil. *Boletim do Museu Paraense Emilio Goeldi. Ciencias Naturais* **13**: 213-219.

Gainey, P. A. (2014) Drift seeds on Cornish strandlines. *The Drifting Seed* **20**: 9-12.

GBIF (2019) *Myristica fragrans* Houtt. *In* GBIF Secretariat (2019). GBIF Backbone Taxonomy. Checklist dataset. <https://doi.org/10.15468/39omei> (accessed *via* <GBIF.org on 5 June 2020>)

Govind, M. G., Dan, M. and Rameshkumar, K. B. (2020) *Myristica trobogarii* (Myristicaceae), a new species from the southern Western Ghats, India. *Phytotaxa* **437**: 206-212.

Gunn, C. R., Andrews, J. M. and Paradine, P. J. (1976-1982) Stranded seeds and fruits from the Yucatan Peninsula. *Anales del Instituto de Biologia de la Universidad Nacional Autonoma de Mexico. Series Botanica* **47-53**: 21-60.

Gunn, C. R. and Dennis, J. V. (1973) Tropical and temperate stranded seeds and fruits from the Gulf of Mexico. *Contributions in Marine Science* **17**: 111–121.

Gunn, C. R., Dennis, J. V. and Paradine, P. J. (1999) *World guide to tropical drift seeds and fruits*. Krieger Publishing Company, Malabar, Florida, U.S.A. 240pp.

Guppy, H. B. (1906) *Observations of a naturalist in the Pacific between 1896 and 1899.* Volume **2** - *Plant dispersal*. MacMillan and Co. Ltd., London & New York. 627pp.

Gurgel, E. S. C., Carvalho, A. C. M., Santos, J. U. M. and Silva, M. E. (2006) *Virola surinamensis* (Rol.) Warb. (Myristicaceae): aspectos morfologicos do fruto, semente, germinacao e plantula. *Boletim do Museu Paraense Emilio Goeldi. Ciencias Naturais* **1**: 37-46.

Hemsley, W. B. (1885) *Report of the scientific results of the voyage of the H.M.S. Challenger during the years 1873-76.* Volume **1**. *Botany.* HMSO, London. 333pp.

Hetharie, H., Raharjo, S. H. T., Rahado, K. and Hehanussa, M. L. (2015) Morphological diversity of nutmeg mother trees and seedlings in Lilibooi Village, Ambon Island. *Basic Science for Sustainable Marine Development*. *Proceedings of 1st International Seminar of Basic Science, FMIPA Unpatti - Ambon June, 3rd-4th 2015*. Mathematic and Natural Science Faculty, Pattimura University, Indonesia. pp 170-176.

Howe, H. F. and Vande Kerckhove, G. A. (1980) Nutmeg dispersal by tropical birds. *Science* **210**: 925-927.

Howe, H. F. and Miriti, M. N. (2004) When seed dispersal matters. *BioScience* **54**: 651-660.

Ibrahim, M. A., Cantrell, C. L., Jeliazkova, E. A., Astatkie, T. and Zheljazkov, V. D. (2020) Utilization of Nutmeg (*Myristica fragrans* Houtt.) seed hydrodistillation time to produce essential oil fractions with varied compositions and pharmacological effects. *Molecules* **25**: 565. <https://doi.org/10.3390/molecules25030565>

Mao, C.-L., Zhang, F.-L., Yang, T., Li, X.-Q. and Wu, Y. (2019) The complete chloroplast genome sequence of *Myristica yunnanensis* (Myristicaceae). *Mitochondrial DNA* **4B**: 1871-1872.

Marcelle, G. B. (1995) *Production, handling and processing of nutmeg and mace and their culinary uses*. FAO, Rome. 112pp.

Moreira, J. I., Riba-Fernandez, P. and Lobo, J. (2017) Toucans (*Ramphastos ambiguus*) facilitate resilience against seed dispersal limitations to a large-seeded tree (*Virola surinamensis*) in a human-modified landscape. *Biotropica* **49**: 502-510.

Nagja, T., Vimal, K. and Sanjeev A. (2016) *Myristica fragrans*: a comprehensive review. *International Journal of Pharmacy and Pharmaceutical Sciences* **8**: 27-30.

Nanlohy, F. N., Semuel, M. Y., Yalindua, A. and Rambi, E. V. (2017) The position of species and the reconstruction of phylogeny trees of Tahuna nutmeg based on the *rbcL* gene DNA chloroplast. *European Journal of Biotechnology and Bioscience* **5**: 1-5.

Nelson, E. C. (1988) Exotic drift fruits and seeds from the coasts of Britain and adjacent islands. *Journal of the Royal Institution of Cornwall* (New Series), **10**: 147-177.

Nelson, E. C. (2000) *Sea Beans and Nickar Nuts. A handbook of exotic seeds and fruits stranded on beaches in north-western Europe*. BSBI Handbook Number **10**. Botanical Society of the British Isles, London. 156pp.

Norton, E. (2008) Tropical Storm Fay leaves one-day bonanza on Fort Lauderdale Beach. *The Drifting Seed* **14**: 3-4.

Perry, E. (2000) Beach bytes - beans past and present. *The Drifting Seed* **6**: 8-9.

Perry, E. and Dennis, J. V. (2010) *Sea-beans from the tropics: a collector's guide to sea-beans and other tropical drift on Atlantic shores*. Krieger, Malabar, Florida.

Purseglove, J. W. (1968) *Tropical crops. Dicotyledons*. Longman, London.

Quigley, D. T. G., Gainey, P. A., Moss, H., Judge, W., Venn, E. and Dinsdale, A. (2016) First records of Jamaican walnuts *Juglans jamaicensis* (Juglandaceae) from Irish and UK waters, together with observations on other walnut species reported from NW Europe. *New Journal of Botany* **6**: 102-108.

Ridley, H. N. (1930) *Dispersal of plants throughout the world*. Reeve, London. 744pp.

Santamaría-Aguilar, D., Aguilar, R. and Lagomarsino, L. P. (2019) A taxonomic synopsis of *Virola* (Myristicaceae) in Mesoamerica, including six new species. *PhytoKeys* **134**: 1-82.

Smith, A. C. and Wodehouse, R. P. (1937) The American species of the Myristicaceae. *Brittonia* **2**: 393-510.

Smith, P. (2018) *The book of seeds*. Ivy Press, London.. 656pp.

Sullivan, C. J., Williams, J. and Sullivan, G. (2008) A world of drift seeds. *The Drifting Seed* **14**: 5-10.

Sullivan, G. (2003) Sea-Bean Collection at University of Texas at Austin Marine Science Institute. *The Drifting Seed* **9**: 7-9.

Swetha, V. P., Sheeja, T. E. and Sasikumar, B. (2019) DNA barcoding to resolve phylogenetic relationship in *Myristica* spp. *Journal of Spices and Aromatic Crops* **28**: 131-140.

Tallei, T. E. and Kolondam, B. J. (2015) DNA Barcoding of Sangihe Nutmeg (*Myristica fragrans*) using *mat*K Gene. *HAYATI Journal of Biosciences* **22**: 41-47.

Thangaselvabai, T., Sudha, K. R., Selvakumar, T. Balakumbahan, R. (2011) Nutmeg (*Myristica fragrans* Houtt) - the twin spice - a review. *Agricultural Reviews* **32**: 283-293

Van Roosmalen, M. G. M. (1985) *Fruits of the Guianan Flora*. Institute of Systematic Botany, Utrecht University & Silvicultural Department of Wageningen Agricultural University, Netherlands. 483pp.

Witherington, B. and Witherington, D. (2017) *Florida's living beaches - a guide for the curious beachcomber* (2nd Edition). Pineapple Press Inc., Saratosa, Florida, U.S.A. 390pp.

Zumbroick, T. J. (2005) The introduction of Nutmeg (*Myristica fragrans* Houtt.) and Cinnamon (*Cinnamomum verum* J. Presl) to America. *Acta Botánica Venezuelica* **28**: 155-160.

TABLE 1. NW European records of stranded Nutmegs (*Myristica fragrans*).

Table 1. NW European records of stranded Nutmegs (*Myristica fragrans*)

Date	Location	Latitude (°N)	Longitude	Number	Max. Length (mm)	Max. Width (mm)	Max. Depth (mm)	Collector	Voucher Specimens	Reference
c.1900	Isle of Barra, Outer Hebrides, W Scotland	56.9809	7.4568 °W	2				William MacGillivray	ABDUZ: 50086.36 & 37	Nelson (1988, 2000), Perry & Dennis (2003)
1908-1919	Isle of Barra, Outer Hebrides, W Scotland	56.9809	7.4568 °W	1	20			William MacGillivray	WHM: 1992.13.76.8	Nelson (1988, 2000), Perry & Dennis (2003)
24/09/2004	Zandvoort, W Netherlands	52.3743	4.4227 °E	1	20			Wim Kruiswijk	Wim Kruiswijk's private collection	Cadée & Kruiswijk (2004)
15/12/2008	Porthcothan Beach, N Cornwall, SW England (SW8672)	50.5103	5.0276 °W	1	23.5	19	18	Jane Darke	Jane Darke's private collection	Gainey (2014)
25/07/2013	Penhale Beach, N Cornwall, SW England (SW762567)	50.3728	5.1353 °W	1	29	25	23	Chris Easton	Chris Easton's private collection	Gainey (2014)
15/11/2013	Perranporth Beach, N Cornwall, SW England (SW7554)	50.3490	5.1569 °W	1	28	24	33	Chris Easton	Chris Easton's private collection	This paper
15/11/2013	Perranporth Beach, N Cornwall, SW England (SW7534)	50.3490	5.1569 °W	1	30	21	20	Chris Easton	Chris Easton's private collection	This paper
22/11/2013	Gwithian Beach, N Cornwall, UK (SW575407)	50.2214	5.3865 °W	1	28	24	21	Paul Gainey	Paul Gainey's private collection	This paper
26/12/2013	Perranporth Beach, N Cornwall, SW England (SW76357	50.3490	5.1569 °W	1	25	21		Jane Darke	Jane Darke's private collection	This paper
15/7-14/10/2019	between Seafield Beach (Quilty) and Fanore Beach, Co Clare, W Ireland	52.8173-53.1197	9.2882-9.4559 °W	23	22-28	19-22		Liam MacNamara	DBN: 2020 (4) & Liam MacNamara's private collection	This paper

PLATE 1. Nutmegs (*Myristica fragrans*) stranded on the County Clare coast, Ireland (July - October 2019). Photograph © Liam MacNamara.

PLATE 2. Nutmegs (*Myristica fragrans*) stranded on the County Clare coast, Ireland (July - October 2019). Photograph © Liam MacNamara.

PLATE 3. Nutmegs (*Myristica fragrans*) stranded on the coast of Cornwall, England (July - December 2013). Photograph © Paul A. Gainey.