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# Brachiopodes actuels

Historique et révision de la collection D.-P. Øhlert (Laval)  
Brachiopodes des côtes françaises métropolitaines

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**NETS**  
**Geol.**

Photo de couverture

*Megerlia* fixée sur une *Novocrania*. (Provenance : st. BM 30 : 139-147 m, 42°41.67'N - 8°48.11'E (N/O Catherine-Laurence - Nord de la baie de Calvi, W Corse), cliché Christian C. Emig

En bas à droite de la couverture : Pauline et Daniel Œhlert

Montage de la photo: Jérôme Tréguier

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## Brachiopodes actuels

Historique et révision de la collection D.-P. Œhlert (Laval)  
Brachiopodes des côtes françaises métropolitaines

Fernando Álvarez, Christian C. Emig, Jérôme Tréguier

### Résumé

Le Musée des Sciences de Laval possède une intéressante collection de brachiopodes actuels collectés lors des premières campagnes océanographiques françaises et monégasques au cours de la deuxième moitié du XIX<sup>e</sup> siècle. Ceux-ci ont été étudiés par D.-P. Œhlert (1849-1920), spécialiste des brachiopodes fossiles et actuels, qui a également obtenu par échange d'autres exemplaires de brachiopodes provenant de différentes parties du monde non échantillonnées lors des campagnes ; ces exemplaires sont inclus dans les collections. En plus de ce matériel, les brachiopodes actuels des collections de Monterosato (1841-1927) et de Caillaud (1787-1869), appartenant au Musée des Sciences, ont été redécrits.

Cet ouvrage présente dans sa première partie, la totalité de la remarquable collection d'Œhlert, principalement obtenus lors des dragages effectués depuis le Golfe de Gascogne jusqu'au Cap Horn ou à Terre-Neuve. Dans la deuxième partie, 724 spécimens (646 de la collection Œhlert, 51 de collection Monterosato et 27 de collection Caillaud) ont été révisés, illustrés photographiquement, et brièvement discutés. Les descriptions taxinomiques de 39 espèces appartenant à 32 genres sont proposées. Pour tous les exemplaires, leur nom d'espèce ou leur synonymie actuelle, avec leur numéro de collection, sont fournis.

La mise en valeur de ces collections est également l'opportunité de présenter, dans une troisième partie, un bilan actualisé de l'inventaire, de la distribution géographique et de la répartition bathymétrique des brachiopodes actuels le long des côtes de la France métropolitaine.

Dans la Zone économique exclusive française (Océan Atlantique) et la Zone de protection écologique française (mer Méditerranée), les brachiopodes sont tous des épibiontes. La morphologie et l'anatomie de l'adulte sont brièvement décrites, ainsi que les principales caractéristiques de leur histoire naturelle. Leur distribution bathymétrique s'étend depuis les zones littorales jusque dans l'étage Bathyal. 27 espèces, réparties en 22 genres, ont été recensées avec respectivement 6 espèces en Manche, 23 dans l'Atlantique et 11 en mer Méditerranée. Les données sur la répartition géographique des brachiopodes au large des côtes françaises proviennent presque exclusivement des campagnes océanographiques. Sur le plateau continental, les brachiopodes sont généralement cryptiques, donc peu accessibles depuis la surface, nécessitant des plongées en scaphandre autonome, d'autant que leur densité est faible et leur taille petite, souvent moins d'un centimètre. En revanche, dans le domaine profond, au-delà du rebord du plateau continental vers environ 100 m, la diversité des brachiopodes est maximale avec de fortes densités, pouvant atteindre plusieurs centaines d'individus au m<sup>2</sup> dans l'étage Bathyal supérieur.

Cette synthèse inédite constitue un précieux document de référence qui permettra de suivre l'évolution de ces populations fossiles et actuelles dans les années à venir.

**Mots-clés** : brachiopodes actuels ; collection Œhlert ; Collection Monterosato ; Collection Caillaud ; Campagnes océanographiques ; Musée des Sciences ; Laval ; distribution

## Abstract

### ***Recent brachiopods: History and review of the collection of D.-P. Ehlert (Laval); brachiopods of the continental French coasts.***

The "Musée des Sciences de Laval" houses an interesting collection of Recent brachiopods mostly sampled during the first Monegasque and French oceanographic cruises in the second half of the 19th century. These were studied by D.-P. Ehlert (1849-1920), a specialist in fossil and extant brachiopods, who also obtained more brachiopods by exchange, from different parts of the world not sampled by the cruises, that also form part of the collections. Besides of this material, Recent brachiopods from the Monterosato (1841-1927) and Cailliaud (1787-1869) collections are also part of the Museum collections.

The first part of this book presents Ehlert's remarkable collection dedicating special attention to the dredging localities that range from Bay of Biscay to Cap Horn or Newfoundland. In the second part, the 724 specimens (646 from the Ehlert Collection, 51 from Monterosato Collection and 27 from Cailliaud Collection) have been studied, photographically illustrated and briefly described and discussed. Systematic descriptions of 39 species included in 32 genera are provided. A selected synonymy for each species and the museum numbers of all the specimens are provided.

The value of these collections is enhanced in a third part by an updated geographic and depth distribution of extant brachiopods along the French coasts. In the French Exclusive Economic Zone (Atlantic Ocean) and Ecological Protection Zone (Mediterranean Sea), the brachiopods are all epibionts. The morphology and the anatomy of the adult are briefly described, as well as the main characteristics of their natural history. Their bathymetric distribution ranges between littoral to Bathyal zone. Twenty seven species, referred to 22 genera, are listed with respectively six species in the Channel, 23 in the Atlantic Ocean and 11 in the Mediterranean Sea. The data on the geographical distribution of the brachiopods off the French coasts come almost exclusively from oceanographic expeditions. On the continental shelf, the brachiopods are generally cryptic, therefore not very easy to reach from the surface, requiring scuba diving, their density is low and their size small, often less than one centimetre. On the other hand, in the deep-sea, beyond the shelf break at nearly 100m, the diversity of the brachiopods is maximum with high densities, reaching several hundreds of individuals per square meter in the Upper Bathyal zone.

This new synthesis constitutes an invaluable reference document for future studies of fossil and Recent brachiopod populations.

**Keywords:** Recent brachiopods; Ehlert Collection; Monterosato Collection; Cailliaud Collection; oceanographic expeditions; Science Museum; Laval; distribution. *f*

## AVANT-PROPOS

Daniel ŒHLERT, paléontologue lavallois, a acquis très vite une renommée internationale dès la publication de son premier article sur les brachiopodes dévoniens du département de la Mayenne (1877). Son œuvre scientifique ne comprend pas moins de cent-neuf d'articles traitant principalement des faunes du Paléozoïque de l'Ouest de la France, mais aussi d'autres régions telle les Pyrénées. Outre son attachement à l'inventaire de la faune paléozoïque, il a également apporté de précieuses contributions à la connaissance de la stratigraphie et de la cartographie.

La part de l'œuvre de D. Œhlert consacrée aux brachiopodes actuels est intégralement rapportée dans le premier article de ce fascicule qui témoigne scrupuleusement de l'intérêt qu'il portait aux brachiopodes actuels, soucieux qu'il était de mieux comprendre et appréhender la morphologie et l'évolution de ces organismes auxquels il a consacré sa vie, en y associant son épouse.

Cela dit, sa contribution à la connaissance des brachiopodes actuels est longtemps restée méconnue. Les spécimens étudiés provenaient de cinq campagnes océanographiques et ont fait l'objet de onze articles, dont sept en collaboration avec P. Fischer, entre 1881 et 1908, jusqu'à ce que le Conservateur du Musée des Sciences de Laval, responsable de la collection Œhlert et soucieux de sa mise en valeur, n'extirpe les échantillons des tiroirs.

Ce sont ces spécimens qui font l'objet du second article de ce fascicule.

Leur mise en valeur est également l'opportunité de présenter, dans un troisième article, un bilan actualisé de l'inventaire, de la distribution géographique et de la répartition bathymétrique des brachiopodes actuels le long des côtes de la France. Cette synthèse inédite constitue un précieux document de référence qui permettra de suivre l'évolution de ces populations dans les années à venir.

Ces trois articles, essentiels à mes yeux, sont le prolongement direct de ma requête, exprimée en 1985 à Brest lors de l'introduction du 1<sup>er</sup> Congrès international sur les brachiopodes, de réviser et actualiser toutes les formes décrites préalablement à la seule fin d'une harmonie cognitive cohérente.

Patrick R. Racheboeuf



# La collection de brachiopodes actuels du Musée des Sciences, Laval

Collections de Œhlert, de Monterosato et de Cailliaud

par Jérôme Tréguier

## Résumé

Daniel Œhlert (1849-1920), conservateur des musées de Laval, en collaboration avec Paul Fischer (1835-1893), assistant au Muséum national d'Histoire naturelle de Paris, fut amené à étudier et déterminer les brachiopodes actuels récoltés lors des premières campagnes océanographiques réalisées par les navires le *Travailleur* (1880-1882), le *Talisman* (1883), *La Romanche* (1882-1883), *l'Hirondelle* (1886-1888) et le *Français* (1903-1905). Les espèces ainsi déterminées sont listées, cartographiées et renommées avec la nomenclature actuellement valide. Sur les 163 échantillons ou lots d'individus de brachiopodes actuels que comprend la collection Œhlert 44 proviennent assurément de ces récoltes. Le Musée des Sciences possède également 17 lots de brachiopodes actuels de la collection de Monterosato (1841-1927) et 5 lots de la collection de Cailliaud (1787-1869).

Mots-clés : brachiopodes actuels ; collection Œhlert ; Campagnes océanographiques ; Musée des Sciences ; Laval

## Abstract :

Daniel Œhlert (1849-1920), museum curator of Laval, in collaboration with Paul Fisher (1835-1893), assistant of the National Museum of Natural History, studied and identified the actual brachiopods that were collected during the first oceanographic expedition done by ships *Le Travailleur* (1880-1882), *Le Talisman* (1883), *La Romanche* (1882-1883), *L'Hirondelle* (1886-1888) and *Le Français* (1903-1905). The identified species are listed, mapped and renamed on the basis of the current classification. The Œhlert collection counts 163 specimens or individual lots of actual brachiopods, 44 of which come from those expeditions. The Science Museum owns 17 lots of actual brachiopods from Monterosato collection (1841-1927) and 5 lots from the Cailliaud collection (1787-1869).

Keywords : recent brachiopods ; Œhlert collection ; Oceanographic expedition ; Science Museum ; Laval

## Introduction

Daniel Victor Œhlert (1849-1920) a eu un rôle prépondérant pour le Musée des Sciences de Laval.

Il était tout d'abord le conservateur des musées d'Histoire naturelle et d'archéologie de Laval de 1883 à 1920 (Tréguier, 2013). De part ces missions, il contribue à la gestion et l'enrichissement des collections générales de ces deux musées.

Mais Daniel Œhlert était aussi un passionné de paléontologie et de géologie, il a destiné une grande partie de sa vie aux fossiles du Paléozoïque des terrains ordoviciens et dévoniens de la Mayenne. Ses recherches l'amènent à décrire 149 nouvelles espèces comprenant des crinoïdes, des trilobites, des lamellibranches, des gastéropodes mais surtout des brachiopodes, groupe

zoologique dont il est devenu l'un des spécialistes internationaux de l'époque (Tréguier, 2010). Cette renommée est attestée par les nombreux échanges qu'il entretient avec James Hall et John M. Clarke qui règnent alors sur la paléontologie du Paléozoïque d'Amérique du Nord.

Conjointement à ses recherches paléontologiques, il étudie les brachiopodes actuels. Il réalise un important travail sur leurs physiologie et anatomie. Dans un premier temps, il analyse les ouvrages d'Edward Morse (Ehlert, 1880a) et d'Aleksander Kowalevski (Ehlert & Deniker, 1883) qui séparent, à partir de données du développement, les brachiopodes des mollusques, et de William Dall (Ehlert, 1880b) qui, inversement, intègre les brachiopodes dans l'embranchement des Mollusques.

Paul Fischer (1835-1893), alors assistant au Muséum national d'Histoire naturelle de Paris, lui confie, pour son important « Traité de Conchyliologie » (Fischer, 1887), la partie concernant les brachiopodes. Daniel Ehlert s'attache à y développer la partie anatomique et physiologique du groupe, multipliant les figures, de façon à donner un ensemble des connaissances acquises sur ce groupe, ce qui n'avait pas été fait jusqu'alors. Du plus, il apporte des vues personnelles et ce travail lui vaut de nombreuses approbations venues de France et de l'étranger.

Parallèlement, il s'intéresse aux expéditions océanographiques contemporaines qui récoltaient des brachiopodes actuels. Il commence par une analyse des espèces de brachiopodes récoltées lors de l'expédition du *HMS Challenger* entre 1873 et 1876 (Ehlert, 1881). Puis il est amené à étudier les brachiopodes collectés au cours des campagnes par les navires le *Travailleur* et le *Talisman* (Fischer & Ehlert, 1890c ; Fischer & Ehlert, 1891), *La Romanche* (Fischer & Ehlert, 1892b), *l'Hirondelle* (Fischer & Ehlert, 1890a ; Fischer & Ehlert, 1892a) et le *Français* (Ehlert, 1906 ; Ehlert, 1908). Le matériel récolté lui permet de faire connaître l'anatomie de plusieurs espèces et de donner en particulier l'anatomie de formes aberrantes, prises pour des térébratulines (*Eucalathis*, *Dyscolia*). Les modifications de l'appareil brachial, observées sur un grand nombre de spécimens, depuis la taille de 1 mm de long et pendant le développement de l'individu, lui ont permis de reconstituer la marche ontogénique et phylogénique de ce groupe et de les comparer entre elles. Il montre, entre autre, que dans le genre actuel *Magellania* on devrait distinguer deux sections, l'une formée d'espèces boréales (*M. septigera*, *M. cranium*), l'autre d'espèces australes (*M. venosa*), arrivant l'une et l'autre par des métamorphoses différentes à un même état définitif de l'appareil brachial (Fischer & Ehlert, 1892c). Il arrive à la conclusion que bien que les genres *Magas*, *Magasella*, *Terebratella* fossiles puissent être considérés comme des simples stades d'un développement plus parfait, certains d'entre eux, par suite de leur stabilité en certains points ou à certaines époques, doivent quand même constituer de véritables genres et que *Magas pumilus*, *Terebratella menardi*, par exemple, sont si nettement fixés qu'ils fournissent tous les caractères d'une coupe générique bien définie.

Dans une note présentée à l'Académie des Sciences de Paris, Paul Fischer et Daniel Ehlert (1890c) montrent que sur les 16 espèces abyssales de brachiopodes recueillis dans la province lusitanienne, 13 se trouvaient représentées dans les dépôts pliocènes marins au sud de l'Italie. Plusieurs de ces espèces sont actuellement absentes dans la mer Méditerranée tandis qu'elles prospèrent dans l'Atlantique où elles trouvent dans les grandes profondeurs des conditions de température plus conformes à leur organisme ; d'une façon générale ils indiquent que par suite du réchauffement progressif des eaux de la Méditerranée, la faune abyssale, qui n'est



que résiduelle, est en voie d'extinction.

Daniel Œhlert arrête son travail de scientifique en 1911, à la mort de sa femme Pauline, née Crié (1854-1911), avec qui il travaillait en étroite collaboration (figure 1). Il signe d'ailleurs ses articles D.-P. Œhlert pour « Daniel - Pauline Œhlert ». Entre 1911 et 1920, il consacra tout son temps et son énergie à la restauration du Vieux-château de Laval pour le transformer en un musée d'Histoire naturelle et d'archéologie.

De par leurs recherches et prospections paléontologiques et géologiques, Daniel et Pauline Œhlert se sont constitués une très importante collection de fossiles et de roches que Daniel Œhlert légua aux musées de la ville de Laval à sa mort en 1920. La collection paléontologique Œhlert comprend plusieurs milliers d'échantillons, provenant en grande partie du département de la Mayenne, mais aussi de d'autres régions et pays. En effet, Daniel Œhlert faisait de nombreux échanges de fossiles avec des chercheurs français et étrangers.

Dans le cadre de l'inventaire de la collection Œhlert du Musée des Sciences, en plus de la paléontologie, il a été trouvé une collection de brachiopodes actuels, qui est décrite dans ce présent travail. Nous en avons profité pour rechercher d'autres échantillons de brachiopodes actuels susceptibles d'être présents dans d'autres collections du musée. Ainsi, il a été retrouvé également 17 lots de brachiopodes actuels dans la collection malacologique du Marquis de Monterosato (1841-1927) et 5 lots dans la collection de Frédéric Cailliaud (1787-1869).

## **COLLECTION D.-P. ŒHLERT**

La collection Œhlert des brachiopodes actuels présente un intérêt double :

**Historique** : Daniel Œhlert est chargé, par Paul Fischer, d'étudier les échantillons de brachiopodes actuels récoltés lors des premières grandes campagnes océanographiques françaises qui ont débutées vers la fin du XIX<sup>e</sup> siècle en France. Ces campagnes sont initiées, « sous les auspices des Ministères de la Marine et de l'Instruction publique » par le professeur Alphonse Milne-Edwards, directeur du Muséum national d'Histoire naturelle de Paris (MNHN), qui dirige des expéditions dans l'océan Atlantique Nord et en mer Méditerranée à bord des navires de la Marine nationale : le *Travailleur* (1880-1882) et le *Talisman* (1883). Elles sont complétées par les missions scientifiques du Cap Horn de *La Romanche* (1882-1883). Le prince Albert I<sup>er</sup> de Monaco met également à la disposition des scientifiques les récoltes effectuées par ses yachts entre 1885 et 1915. Daniel Œhlert étudie les brachiopodes récoltés pendant les campagnes d'exploration par l'*Hirondelle* (1886-1888). Il est également chargé d'étudier les brachiopodes récoltés lors de la première expédition antarctique française menée par Jean-Baptiste Charcot sur le trois-mâts goélette le *Français* (1903-1905).

**Scientifique** : Cette collection présente dans un parfait état de conservation plusieurs espèces de brachiopodes recueillies à de « grandes profondeurs » (voir contribution de Fernando Álvarez). La collection conservée au Musée des Sciences de Laval comprend 163 échantillons dont une partie provient des campagnes du *Travailleur*, du *Talisman*, de *La Romanche* et de

*l'Hirondelle*. Malheureusement, suite à plusieurs déménagements des collections du Musée des Sciences, de nombreux d'échantillons se sont détachés de leurs supports (où étaient inscrit la localité et la date de collecte) et se sont mélangés entre eux. Pour la plupart, il nous a été impossible de réassocier les échantillons aux bons supports, entraînant ainsi une perte d'information fortement préjudiciable pour la science.

### **I. Détail de la collection D.-P. Œhlert**

Les brachiopodes actuels de la collection Œhlert sont soit collés sur des supports rectangulaires en cartons souples placés à l'intérieur de tubes en verre eux-mêmes collés sur un carton rectangulaire plus rigide sur lequel est collé une étiquette où sont notées diverses informations, soit directement collés sur le carton rectangulaire plus rigide sur lequel est également collé une étiquette où sont notées diverses informations.

La collection comprend 163 échantillons ou lots (appendice 1) : 11 échantillons/lots proviennent des récoltes du *Travailleur*, 28 du *Talisman*, 2 de *La Romanche*, 3 de *l'Hirondelle* et 119 n'ont pas l'identification du navire qui a récolté ces spécimens.

90 échantillons/lots possèdent une étiquette ou une inscription sur laquelle, pour la plupart, le lieu de la récolte est indiqué. Les 73 autres échantillons/lots sont sans cartel.

Les tiroirs dans lesquels sont conservés les spécimens contiennent également de nombreux cartels sans échantillon.

La collection contient 589 spécimens : 240 individus entiers, 184 valves dorsales et 165 valves ventrales (appendice 1).

A titre de comparaison, Daniel Œhlert a probablement récupéré de nombreux échantillons de brachiopodes actuels provenant des autres expéditions océanographiques, telles que celles réalisées par le *Porcupine* (1869-1870) et surtout le *HMS Challenger* (1873-1876). Ceci explique pourquoi il y a dans sa collection de nombreux brachiopodes provenant de Nouvelle-Zélande, d'Australie, du Japon, de Norvège, des côtes du Mexique...

Tous les échantillons ont été identifiés et révisés par Fernando Álvarez (voir sa contribution). Il a identifié pour l'ensemble de la collection Œhlert 39 espèces soit environ 10 % du nombre total d'espèces actuelles recensées dans le monde (Emig *et al.*, 2016). Les brachiopodes antarctiques ont été récemment recensés par Emig (2015b).

### **II. Les brachiopodes récoltés par le *Travailleur* (1880-1882) et le *Talisman* (1883)**

Le *Travailleur* (figure 2) était un aviso à roues de 829 tonnes propulsé par une machine à vapeur de 600 chevaux construit par l'arsenal de Lorient en 1864. Le ministre de la Marine le mit à disposition du marquis de Folin, capitaine du port de Bayonne, à la tête d'une équipe de huit scientifiques, dont le professeur Milne-Edwards et deux chercheurs britanniques, pour effectuer une campagne scientifique en juillet 1880 qui avait pour objectifs l'exploration de la fosse du Capbreton, la recherche de dépressions sous-marines au Nord de l'Espagne et l'étude

de la faune profonde du Golfe de Gascogne (Estival, 2003) (figure 3). Grâce à l'installation d'un appareil de sondage équipé d'un fil d'acier dit « corde de piano » et d'un treuil à vapeur qui permettait de faire des sondages, des carottages, des dragages et des chalutages jusqu'à près de 4000 mètres de profondeur, cette première expédition obtint des résultats qui furent jugés si intéressants qu'une seconde expédition est entreprise l'année suivante afin de comparer la faune profonde du Golfe de Gascogne et des côtes océaniques de la péninsule ibérique avec celle de la Méditerranée (figures 4 et 5). Enfin, la troisième expédition du *Travailleur*, en 1882, est chargée d'étudier plus précisément les régions situées en dehors de la Méditerranée (Portugal, Maroc, Madère, îles Canaries) afin d'y retrouver les espèces communes avec cette mer et dont l'origine devait être atlantique (Fischer & Ehlert, 1891) (figures 6, 7 et 8).

Afin que les chercheurs puissent bénéficier d'un navire plus puissant en vue d'une campagne d'exploration sous-marine, l'amiral Jauréguiberry, aménage à cette fin un aviso éclairer d'escadre, le *Talisman* (figure 9). Cet aviso de seconde classe, construit au Havre en 1862, était un voilier mixte à une hélice entraînée par une machine à vapeur d'une puissance de 920 chevaux (Estival, 2003). Equipé d'un treuil de dragage d'une force de 20 tonnes, il avait reçu des aménagements pour embarquer 7 scientifiques qui disposaient d'un laboratoire installé sur le pont. L'expédition du *Talisman*, effectuée entre juillet et août 1883, a pour mission l'exploration de la côte occidentale d'Afrique, de Gibraltar au Sénégal, des îles du Cap-Vert, de l'archipel des Canaries, des Açores et de la mer des Sargasses (Fischer & Ehlert, 1891) (figures 10, 11 et 12). La mission réalisa de nombreuses mesures hydrologiques, des sondages, des dragages et des chalutages jusqu'à des profondeurs de 3000 m, rapportant de nombreux échantillons d'une faune jusque là inconnue. Ce voyage a procuré une riche moisson de brachiopodes actuels.

Les espèces ont été recueillies à des profondeurs comprises entre 70 m (dragage 22, 31 juillet 1880, côtes du Portugal) et 4060 m (dragage 147, 24 août 1883, nord des Açores). Au large de l'Archipel des Açores, les brachiopodes vivant à de très grandes profondeurs, de 2792 à 4060 m étaient tous de petite taille. Ils ont été récoltés essentiellement par chalutage car, selon Fischer et Ehlert (1891), le dragage apparaît mal adapté pour la capture de ces spécimens : « *Au début de nos opérations, on n'employait que la drague. Nous avons peu à peu renoncé à ce procédé. La drague, en effet, balaye très peu de surface ; elle se remplit rapidement de boue ou de sable et dès lors ne prend plus rien. Sur les fonds coralligènes, sa poche est mise en pièce, accident dont nous avons eu plusieurs fois à nous plaindre, particulièrement au nord de l'Espagne où les Brachiopodes abondent sur les Polypiers. Le chalut au contraire, même lorsqu'il est endommagé, ramène toujours quelques spécimens des fonds coralligènes. Si les fonds sont sablonneux ou vaseux, comme sur les côtes du « Soudan », il permet de faire d'admirables récoltes.* »

Les 21 espèces identifiées (tableau 1), représentent 15 % des espèces connues à l'époque. Davidson (1880) répertorie 139 espèces de brachiopodes actuels. Aujourd'hui, Emig *et al.* (2016) indiquent 398 espèces de brachiopodes actuels, réparties dans 118 genres.

	Identification par Chlert	Nomenclature actuelle (*)	Navire	Dates, lieux de collecte et n du dragage
1	<i>Crania anomala</i> (MLLER, 1776) var. <i>turbinata</i> POLI	<i>Novocrania anomala</i> (MLLER, 1776)	Travailleur	<b>1880</b> : Fosse du Capbreton (22) ; <b>1881</b> : Ctes du Portugal (2) ; <b>1882</b> : Golfe de Gascogne (8), Ctes du Portugal (22)
			Talisman	<b>1883</b> : Golfe de Gascogne (156)
2	<i>Rhynchonella (Hemithiris) cornea</i> FISCHER, 1887	<i>Hispanirhynchia cornea</i> (FISCHER in DAVIDSON, 1887)	Travailleur	<b>1881</b> : Au large du Cap Finisterre (1)
			Talisman	<b>1883</b> : Au large de Mogador (38), entre les Canaries et le Maroc (52), Parages des Canaries (53), Ctes du « Soudan » (73), « Soudan » (75, 76)
3	<i>Dyscolia (**)</i> <i>wyvillei</i> DAVIDSON, 1878	<i>Dyscolia wyvillei</i> (DAVIDSON, 1878)	Travailleur	<b>1881</b> : Nord de l'Espagne (42)
			Talisman	<b>1883</b> : Ctes du Maroc (13), Ctes du « Soudan » (76)
4	<i>Terebratulina caput-serpentis</i> LINN, 1758	<i>Terebratulina retusa</i> (LINN, 1758)	Travailleur	<b>1880</b> : Golfes de Gascogne (22) ; <b>1881</b> : Mditerrane (1, 9), Nord de l'Espagne (39, 40, 42); <b>1882</b> : Nord de l'Espagne (3, 8)
			Talisman	<b>1883</b> : Cap Blanc (Maroc) <sup>1</sup> (23, 24), Parages des Canaries (55), La Praya (Archipel du Cap-Vert) (108)
5	<i>Eucalathis (***)</i> <i>tuberata</i> JEFFREYS, 1878	<i>Eucalathis tuberata</i> JEFFREYS, 1878	Travailleur	<b>1881</b> : Cap Finisterre (1), Nord de l'Espagne (39, 42)
			Talisman	<b>1883</b> : Devant le banc d'Arguin (99, 100), Entre Pico et Sao-Jorge (Aores) (139) ; Au Nord de Sao Miguel (144)
6	<i>Eucalathis (***)</i> <i>ergastica</i> FISCHER & CHLERT, 1890	<i>Eucalathis ergastica</i> FISCHER & CHLERT, 1890	Travailleur	<b>1881</b> : Au large du Cap Finisterre (1), Nord de l'Espagne (39, 42)
			Talisman	<b>1883</b> : Cap Spartel (Maroc) (10), Cap Bojador (65, 66), « Soudan » (73, 74, 75), Devant le banc d'Arguin (100), Au Nord de Sao-Miguel (Aores) (144)
7	<i>Terebratula (Liothyrina) vitrea</i> BORN, 1778	<i>Gryphus vitreus</i> (BORN, 1778)	Travailleur	<b>1881</b> : Golfe du Lion (1), Mditerrane (3, 5), Corse (19), Nord de l'Espagne (37, 40) ; <b>1882</b> : Golfe de Gascogne (1, 2, 3), Golfe de Cadix (32), Ctes de Portugal (58)
			Talisman	<b>1883</b> : Cap Bojador (65), Ctes du « Soudan » (74), Iles du Cap Vert (121)
8	<i>Terebratula (Liothyrina) sphenoidea</i> PHILIPPI, 1844	<i>Stenosarina davidsoni</i> LOGAN, 1998	Travailleur	<b>1881</b> : Ouest du Cap Finisterre (1), Mditerrane (1), Nord de l'Espagne (37, 40); <b>1882</b> : Golfe de Gascogne (1, 2, 70), Nord (3) et Sud (32) de l'Espagne, Portugal (19)
			Talisman	<b>1883</b> : Cap Spartel (Maroc) (10), au large de Mazaghan (Maroc) (17), au large de Mogador (Maroc) (38), Parages des Canaries (54), au large du cap Bojador (65, 66), Ctes du « Soudan » (73, 74)
9	<i>Magellania septigera</i> LOVN, 1845	<i>Dallina septigera</i> (LOVN, 1845)	Travailleur	<b>1881</b> : Golfe du Lion (1), Golfe de Gascogne (42) ; <b>1882</b> : Golfe de Gascogne (2, 3, 70), Ctes du Portugal (19)
			Talisman	<b>1883</b> : Cap Cantin (Maroc) (34), Entre les Canaries et le Maroc (52), Parages des Canaries (53), Cap Bojador (65, 66), Ctes du « Soudan » (73), « Soudan » (74, 75, 76)
10	<i>Magellania (Macandrewia) cranium</i> MLLER, 1776	<i>Macandrewia cranium</i> (MLLER, 1776)	Travailleur	<b>1880</b> : Nord de l'Espagne (10) ; <b>1881</b> : Mditerrane (1), Nord de l'Espagne (37, 40) ; <b>1882</b> : Golfe de Gascogne (1, 2, 3), Iles Fariloes (Portugal) (21, 22)
			Talisman	<b>1883</b> : Cap Bojador (65, 66), « Soudan » (73, 74)
11	<i>Mhlfeldtia truncata</i> LINN, 1767	<i>Megerlia truncata</i> (LINN, 1767)	Travailleur	<b>1880</b> : Fosse du Capbreton (22); <b>1881</b> : Golfe du Lion (1), Mditerrane (9) ; <b>1882</b> : Golfe de Gascogne (8, 12), Portugal (21, 22), Canaries (47)
			Talisman	<b>1883</b> : Cap Blanc (Maroc) <sup>1</sup> (23, 24)
12	<i>Mhlfeldtia monstrosa</i> SCACCHI, 1833		Travailleur	<b>1881</b> : Ctes du Portugal (2) ; <b>1882</b> : Golfe de Gascogne (8)
13	<i>Mhlfeldtia echinata</i> FISCHER & CHLERT, 1890		Talisman	<b>1883</b> : Cap Bojador (65, 66), Ctes du « Soudan » (73, 74)
14	<i>Platidia anomioides</i> SCACCHI & PHILIPPI, 1844	<i>Platidia anomioides</i> (SCACCHI & PHILIPPI in PHILIPPI, 1844)	Travailleur	<b>1880</b> : Golfe de Gascogne (9); <b>1881</b> : Ctes du Portugal (2) , Nord de l'Espagne (37) ; <b>1882</b> : Nord de l'Espagne (3)
			Talisman	<b>1883</b> : Cap Spartel (Maroc) (10), Cap Bojador (65), Ctes du « Soudan » (73, 74, 75)
15	<i>Platidia davidsoni</i> DESLONGCHAMPS, 1855	<i>Platidia anomioides</i> (SCACCHI & PHILIPPI, 1844)	Travailleur	<b>1882</b> : Nord de l'Espagne (8)
			Talisman	<b>1883</b> : Parages des Canaries (55)
16	<i>Megathyrus decollata</i> CHEMNITZ, 1785	<i>Megathyrus detruncata</i> (GMELIN, 1789)	Travailleur	<b>1881</b> : Cap Blanc (Maroc) <sup>1</sup> (1, 2 <sup>e</sup> srie) ; <b>1882</b> : Ctes du Portugal (22), Parages des Iles Dsertes (53)
			Talisman	<b>1883</b> : Au large du cap Blanc (Maroc) <sup>1</sup> (23), Cap Blanc (24) <sup>1</sup>
17	<i>Disciniscia atlantica</i> KING, 1868	<i>Pelagodiscus atlanticus</i> (KING, 1868)	Talisman	<b>1883</b> : Au large d'Agadir (42), Au nord de Sao-Miguel (Aores) (144)
18	<i>Neatretia gnomon</i> JEFFREYS, 1869	<i>Cryptopora gnomon</i> JEFFREYS, 1869	Talisman	<b>1883</b> : Au large d'Agadir (42), Au nord de Sao-Miguel (Aores) (144), Au nord des Aores (147)
19	<i>Gwynia capsula</i> JEFFREYS, 1859	<i>Gwynia capsula</i> (JEFFREYS, 1859)	Talisman	<b>1883</b> : Cte du « Soudan » (75), Au nord des Aores (147)
20	<i>Platidia (?) incerta</i> DAVIDSON, 1878	<i>Leptothyrella incerta</i> (DAVIDSON, 1878)	Talisman	<b>1883</b> : Devant le banc d'Arguin (99, 100), Au nord de Sao-Miguel (Aores) (144)
21	<i>Cistella cistellula</i> WOOD, 1841	<i>Argyrotheca cistellula</i> (WOOD, 1841)	Talisman	<b>1883</b> : Au Sud de Fuerteventura (Canaries) (63), Devant le banc d'Arguin (100), Au Sud des Aores (127), Au Nord de Sao-Miguel (Aores) (144)

**Tableau 1** : Liste, dates, lieux de collecte et numro de dragage des espces de brachiopodes actuels rcoltes par le *Travailleur* et le *Talisman* entre 1880 et 1883. (\*) Emig *et al.* (2016) et lvarez (voir sa contribution) (\*\*) le nom de genre *Dyscolia* FISCHER & CHLERT, 1890 ; (\*\*\*) nom de genre *Eucalathis* FISCHER & CHLERT, 1890 ; <sup>1</sup> Il s'agit du Cap Blanc du Nord.

La récolte de nombreux individus d'espèces déjà connues a permis à Fischer et Cœhlert (1891) de les re-décrire et d'apporter de nombreux détails sur leurs morphologies et leurs distributions géographiques, stratigraphiques et bathymétriques. Grâce à ces récoltes, les deux auteurs ont décrit deux nouveaux genres : *Dyscolia* et *Eucalathis* et deux nouvelles espèces : *Eucalathis ergastica* et *Mühfeldtia echinata* (*Megerlia truncata* LINNÉ, 1767) (Fischer & Cœhlert 1890b, 1891).

L'ensemble des échantillons de la collection Cœhlert est détaillé dans la contribution (ci-après) de Fernando Álvarez, notamment la nomenclature, la description des spécimens et des espèces.

1. *Crania anomala* var. *turbinata* : cette espèce, aujourd'hui nommée *Novocrania anomala* (voir Emig, 2014a), a été trouvée dans 5 stations situées dans le Golfe de Gascogne et le long des côtes du Portugal par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 70 m et 1480 m.

Le Musée des Sciences conserve deux valves dorsales (ML-ZOO-MAL-00104) récoltées par le *Travailleur* le 20 juillet 1882 sur les côtes du Portugal à 70 m de profondeur (dragage n° 22).

2. *Rhynchonella cornea* : cette espèce, aujourd'hui nommée *Hispanirhynchia cornea*, a été trouvée dans 7 stations situées au large du Cap Finisterre (Espagne) et le long des côtes occidentales de l'Afrique par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 698 et 2018 m.

Le Musée des Sciences conserve une valve dorsale et une ventrale (ML-ZOO-MAL-00046) récoltées par le *Talisman* le 9 juillet 1883 au « Soudan » (Sahara) à une profondeur de 1435 m (dragage n°76) et une valve dorsale et une ventrale (ML-ZOO-MAL-00053) récoltées par le *Talisman* le 9 juillet 1883 au « Soudan » (Sahara) à une profondeur de 882 m (dragage n°72).

La collection Cœhlert comprend également un individu entier (ML-ZOO-MAL-00047) récolté par le *Talisman* le 9 juillet 1883 sur les côtes du « Soudan » à 822 m de profondeur (dragage n° 75) identifié à l'origine comme *Rhynchonella cornea*. D'après Fernando Álvarez, cet individu s'apparente plutôt à *Notosaria nigricans*, espèce vivant dans les eaux situées aux alentours de la Nouvelle-Zélande et non sur les côtes du « Soudan » comme étiqueté.

La collection contient également 2 lots d'échantillons (ML-ZOO-MAL-00091, ML-ZOO-MAL-00133) sans étiquette.

3. *Dyscolia wyvillei* : cette espèce a été trouvée dans 3 stations situées au Nord de l'Espagne et le long des côtes du Maroc et du « Soudan » par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 896 et 1435 m.

Il n'a pas été retrouvé d'échantillon de cette espèce dans la collection Cœhlert.

4. *Terebratulina caput-serpentis* : cette espèce, aujourd'hui nommée *Terebratulina retusa*, a été trouvée dans 12 stations situées dans le Golfe de Gascogne, au Nord de l'Espagne, au Cap Blanc, dans les parages des Canaries, dans les archipels du Cap-Vert et en Méditerranée par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 120 et 1328 m. Elle est abondante et son extension géographique et bathymétrique est très étendue.

La collection C hlert comprend un individu entier (ML-ZOO-MAL-00050) r colt  par le *Talisman* en 1883.

Elle contient  galement 5 lots d' chantillons de *Terebratulina retusa* (ML-ZOO-MAL-00081, ML-ZOO-MAL-00100, ML-ZOO-MAL-00103, ML-ZOO-MAL-00132, ML-MAL-01292) sans  tiquette.

Enfin neuf individus entiers de *Terebratulina retusa* ont  t  r colt s   Roscoff (ML-ZOO-MAL-00012) et une valve ventrale dans la Manche (ML-ZOO-MAL-00016). Ces  chantillons ne proviennent pas des campagnes du *Travailleur* ou du *Talisman*.

5. *Eucalathis tuberala* : cette esp ce a  t  trouv e dans 7 stations situ es   l'Ouest du Cap Finisterre, au Nord de l'Espagne, devant le banc d'Arguin et dans les A ores par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 896 et 2995 m.

La collection C hlert comprend trois individus entiers, une valve dorsale et une ventrale (ML-MAL-01282) r colt s par le *Travailleur* le 13 juin 1881 et/ou le 15 ao t 1881 au nord de l'Espagne   une profondeur de 2018 m et/ou 1226 m (dragage n  1 et/ou 39). La collection contient  galement un autre lot d' chantillons (ML-ZOO-MAL-00108) sans  tiquette.

6. *Eucalathis ergastica* : cette esp ce a  t  trouv e dans 11 stations situ es au large du Cap Finisterre, au Nord de l'Espagne, au Cap Spartel (Maroc), au Cap Bojador, au « Soudan », devant le banc d'Arguin et dans les A ores par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 640 et 2995 m. Cette nouvelle esp ce, d crite par Fischer & C hlert (1890b, 1891), semble  tre abondante au nord de l'Espagne dans les fonds corallig nes et au large du Cap Finisterre.

La collection C hlert comprend trois individus entiers, deux valves dorsales et trois ventrales (ML-ZOO-MAL-00135) r colt s par le *Talisman* le 10 juin 1883 au Cap Spartel (Maroc)   une profondeur de 717 m (dragage n  10).

7. *Terebratula vitrea* : cette esp ce, aujourd'hui nomm e *Gryphus vitreus*, a  t  trouv e dans 14 stations situ es dans le Golfe du Lion, en M diterran e, en Corse, au Nord de l'Espagne, dans le Golfe de Gascogne, dans le Golfe de Cadix, sur les c tes du Portugal, au Cap Bojador, sur les c tes du « Soudan » et dans les  les du Cap Vert par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 392 et 1865 m. A l'instar de *Terebratulina caput-serpentis*, *T. vitrea* est tr s abondante et son extension g ographique et bathym trique est tr s  tendue.

La collection C hlert comprend un individu entier, une valve dorsale et une ventrale (ML-ZOO-MAL-00025) r colt s par le *Travailleur* le 6 juillet 1882 dans le Golfe de Gascogne   512 m de profondeur (dragage n 3). La collection contient  galement huit autres lots de *Gryphus vitreus*, deux provenant de la M diterran e (ML-ZOO-MAL-00026, ML-ZOO-MAL-00077) et six sans  tiquette (ML-ZOO-MAL-00105, ML-ZOO-MAL-00112, ML-ZOO-MAL-00123, ML-ZOO-MAL-00128, ML-ZOO-MAL-00137, ML-MAL-01294).

8. *Terebratula sphenoides* : cette esp ce, aujourd'hui nomm e *Stenosarina davidsoni*, a  t  trouv e dans 18 stations situ es   l'Ouest du Cap Finisterre, en M diterran e, au Nord et Sud de l'Espagne, au Portugal, dans le Golfe de Gascogne, sur les c tes marocaines et du « Soudan » et dans les parages des Canaries par le *Travailleur* et le *Talisman* par des profondeurs comprises

entre 392 et 2018 m. Elle a parfois été confondue avec *Gryphus vitreus*. Une étude en cours par Christian C. Emig indique que *S. davidsoni* est synonyme de l'espèce fossile *Terebratula sphenoidea* PHILIPPI, 1844 et non comme une nouvelle espèce comme décrite par Logan (1998).

Le Musée des Sciences conserve un individu entier, une valve dorsale et une ventrale (ML-ZOO-MAL-00013) et un individu entier (ML-ZOO-MAL-00015) récoltés par le *Travailleur* le 6 juillet 1882 au Nord de l'Espagne à 512 m de profondeur (dragage n°3), une valve dorsale et une ventrale (ML-MAL-01280) récoltées par le *Travailleur* le 25 juillet 1882 dans le sud de l'Espagne à une profondeur de 440 m (dragage n°32), une valve ventrale (ML-MAL-01290) récoltée probablement par le *Travailleur* dans le Golfe de Gascogne et une valve dorsale et une ventrale (ML-MAL-01279) récoltées par le *Talisman* le 9 juillet 1883 sur la côte du « Soudan » à une profondeur de 640 m (dragage 74).

La collection comprend également six autres lots (ML-ZOO-MAL-00086, ML-ZOO-MAL-00087, ML-ZOO-MAL-00094, ML-ZOO-MAL-00124, ML-ZOO-MAL-00134, ML-ZOO-MAL-0140) sans étiquette.

9. *Magellania septigera* : cette espèce, aujourd'hui nommée *Dallina septigera*, a été trouvée dans 15 stations situées dans le Golfe du Lion (erreur d'identification, confondue avec *Gryphus vitreus*), dans le Golfe de Gascogne, sur les côtes du Portugal, du Maroc, du « Soudan » et dans les parages des Canaries par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 521 et 1435 m. Elle abonde sur les côtes africaines, attachées à de petites pierres, à des débris de coquilles ou à des fragments de Polypiers.

Le Musée des Sciences conserve un individu entier (ML-MAL-01295) récolté dans le Golfe de Gascogne (probablement par le *Travailleur*), trois valves dorsales et deux ventrales (ML-ZOO-MAL-00003) une valve dorsale et une ventrale (ML-ZOO-MAL-00004) une valve dorsale et une ventrale (ML-ZOO-MAL-00005) une valve dorsale et une ventrale (ML-ZOO-MAL-00007) récoltées par le *Talisman* le 8 juillet 1883 au Cap Bojador à 640 ou 782 m de profondeur (dragage 65 ou 66), deux individus entiers (ML-MAL-01277) récoltés par le *Talisman* le 8 et/ou 9 juillet 1883 au Cap Bojador et/ou Sahara (Côtes du Soudan) à une profondeur de 640 m et / ou 782 m (dragage 65 et/ou 66 et/ou 74) et deux individus entiers (ML-MAL-01281) récoltés par le *Talisman* le 9 juillet 1883 au Sahara (côte du Soudan).

La collection comprend également deux autres lots de *Dallina septigera* (ML-ZOO-MAL-00068, ML-ZOO-MAL-00072) sans étiquette.

Des échantillons décrits par Fischer et Ehlert comme l'espèce *Dallina septigera* appartiennent d'après Fernando Álvarez (voir sa contribution) plutôt à l'espèce *Fallax dalliniformis* ATKINS, 1960 : une valve dorsale et une ventrale (ML-ZOO-MAL-00006) et une valve dorsale et une ventrale (ML-ZOO-MAL-00008) récoltées par le *Talisman* le 8 juillet 1883 au Cap Bojador à une profondeur de 782 m et/ou 640 m (dragage n° 65 et/ou 66).

Une valve dorsale et une ventrale (ML-ZOO-MAL-00010) deux individus entiers (ML-ZOO-MAL-00017) récoltés par le *Talisman* le 8 juillet 1883 au Cap Bojador à une profondeur de 782 m et/ou 640 m (dragage n° 65 et/ou 66), et deux individus entiers (ML-ZOO-MAL-00116) sans

étiquette ont été déterminés par Fernando Álvarez (voir sa contribution) comme appartenant également à l'espèce *Fallax dalliniformis* ATKINS, 1960.

10. *Magellania cranium* : cette espèce, aujourd'hui nommée *Macandrevia cranium*, a été trouvée dans 13 stations situées dans le Golfe du Lion (erreur d'identification), dans le Golfe de Gascogne, au Nord de l'Espagne, dans les îles Fariloes (Portugal) et sur les côtes du « Soudan » par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 70 et 1960 m.

Le Musée des Sciences conserve une valve dorsale et une ventrale (ML-ZOO-MAL-00011) récoltées par le *Travailleur* le 6 juillet 1882 dans le Golfe de Gascogne, au Nord de l'Espagne à 512 m de profondeur (dragage n°3), deux valves dorsales (ML-ZOO-MAL-00014) récoltées par le *Travailleur* le 26 juillet 1880 et/ou le 15 août 1881 au nord de l'Espagne à une profondeur de 1960 m et/ou 392 m (dragage n°10 et/ou n°40), un individu entier (ML-MAL-01289) récolté par le *Travailleur* le 6 juillet 1882 dans le Golfe de Gascogne à une profondeur de 564 ou 608 ou 512 m (dragage n°1 ou 2 ou 3), trois individus entiers (ML-ZOO-MAL-00002) récoltés par le *Talisman* le 8 juillet 1883 au Cap Bojador à 640 ou 782 m de profondeur (dragage 65 ou 66).

La collection contient également six autres lots de cette espèce, une provenant de Norvège (ML-MAL-01278) et cinq sans étiquette (ML-ZOO-MAL-00093, ML-ZOO-MAL-00099, ML-ZOO-MAL-00106, ML-ZOO-MAL-00109, ML-ZOO-MAL-00110).

11. *Mühlfeldtia truncata* : cette espèce, aujourd'hui nommée *Megerlia truncata*, a été trouvée dans 10 stations situées dans le Golfe du Lion (mer Méditerranée), et dans la fosse du Capbreton, dans le Golfe de Gascogne, au Portugal, dans les Canaries et au Cap Blanc (océan atlantique) par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 70 et 555 m.

Le Musée des Sciences conserve trois valves dorsales et trois ventrales (ML-ZOO-MAL-00019) une valve dorsale et une ventrale (ML-ZOO-MAL-00018) cinq valves dorsales et trois ventrales (ML-ZOO-MAL-00021) deux individus entiers, trois valves dorsales et trois ventrales (ML-ZOO-MAL-00107) récoltés par le *Talisman* le 15 juin 1883 au Cap Blanc à 120 m de profondeur (dragage n°23).

La collection contient également deux autres lots de cette espèce, un provenant de la mer Méditerranée (ML-ZOO-MAL-00028) et un de la Galite (Tunis) (ML-ZOO-MAL-00033) récolté à une profondeur de 111 m.

12. *Mühlfeldtia monstrosa* : cette espèce, aujourd'hui synonyme de *Megerlia truncata*, a été trouvée dans 2 stations situées dans le Golfe du Lion et les côtes du Portugal par le *Travailleur* par des profondeurs comprises entre 411 et 1068 m.

13. *Mühlfeldtia echinata* : cette espèce, aujourd'hui synonyme de *Megerlia truncata*, a été trouvée dans 4 stations situées au Cap Bojador et sur les côtes du « Soudan » par le *Talisman* par des profondeurs comprises entre 640 et 782 m.

Le Musée des Sciences conserve une valve dorsale et une ventrale (ML-ZOO-MAL-00001) un individu entier (ML-MAL-01283) deux individus entiers, trois valves dorsales et trois ventrales (ML-MAL-01293) récoltés par le *Talisman* le 8 juillet 1883 au Cap Bojador à 640 et/ou 782 m de profondeur (dragage 65 et/ou 66) et une valve dorsale et une ventrale (ML-ZOO-MAL-00052)



récoltées par le *Talisman* le 9 juillet 1883 sur les côtes du « Soudan » (Sahara) à la profondeur de 640 m (dragage n° 74).

La collection contient également douze autres lots de *Megerlia truncata* sans étiquette (ML-ZOO-MAL-00067, ML-ZOO-MAL-00069, ML-ZOO-MAL-00073, ML-ZOO-MAL-00075, ML-ZOO-MAL-00076, ML-ZOO-MAL-00080, ML-ZOO-MAL-00092, ML-ZOO-MAL-00113, ML-ZOO-MAL-00125, ML-ZOO-MAL-00127, ML-ZOO-MAL-00138, ML-ZOO-MAL-00139).

14. *Platidia anomioides* : cette espèce a été trouvée dans 9 stations situées dans le Golfe de Gascogne, au Nord de l'Espagne, sur les côtes du Portugal, du Maroc et du « Soudan » par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 400 et 1190 m.

Le Musée des Sciences conserve deux valves ventrales (ML-ZOO-MAL-00009) récoltées par le *Talisman* le 8 juillet 1883 au Cap Bojador à une profondeur de 782 m (dragage 62 ? plutôt 65). La collection contient également deux autres lots sans étiquette (ML-ZOO-MAL-00054, ML-ZOO-MAL-00058).

15. *Platidia davidsoni* : cette espèce aujourd'hui considérée par quelques auteurs (e.g., Emig *et al.*, 2016 ; voir la contribution de Christian C. Emig, p. 140) comme le synonyme de *Platidia anomioides*, a été trouvée dans 2 stations situées au Nord de l'Espagne et dans les parages des Canaries par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 411 et 1238 m.

La collection contient également deux individus entiers, une valve dorsale et une ventrale (ML-ZOO-MAL-00066) sans étiquette.

16. *Megathiris decollata* : cette espèce, aujourd'hui synonyme de *Megathiris detruncata*, a été trouvée dans 5 stations situées sur les côtes du Portugal, dans les parages des îles Désertes et au Cap Blanc du Nord par le *Travailleur* et le *Talisman* par des profondeurs comprises entre 70 et 120 m.

Le Musée des Sciences conserve deux individus entiers, deux valves dorsales et une ventrale (ML-ZOO-MAL-00020) un individu entier, trois valves dorsales et une ventrale (ML-ZOO-MAL-00022) récoltés par le *Talisman* le 15 juin 1883 au Cap Blanc à 120 m de profondeur (dragage 23 ou 24).

La collection contient également sept autres lots de *Megathiris detruncata*, un provenant de la mer Méditerranée (ML-ZOO-MAL-00027) et six sans étiquette (ML-ZOO-MAL-00055, ML-ZOO-MAL-00062, ML-ZOO-MAL-00070, ML-ZOO-MAL-00078, ML-ZOO-MAL-00082, ML-ZOO-MAL-00083).

17. *Discinisca atlantica* : cette espèce, aujourd'hui nommée *Pelagodiscus atlanticus*, a été trouvée dans 2 stations situées au large d'Agadir et dans les Açores par le *Talisman* par des grandes profondeurs comprises entre 2200 et 2995 m.

Aucun échantillon attribué à cette espèce n'a été retrouvé dans la collection Œhlert.

18. *Neatretia gnomon* : cette espèce, aujourd'hui nommée *Cryptopora gnomon*, a été trouvée dans 3 stations situées au large d'Agadir et dans les Açores par le *Talisman* par des grandes

profondeurs comprises entre 2200 et 4060 m.

Aucun échantillon attribué à cette espèce n'a été retrouvé dans la collection Cehlert.

19. *Gwynia capsula* : cette espèce a été trouvée dans 2 stations situées sur la côte du « Soudan » et au nord des Açores par le *Talisman* par des profondeurs comprises entre 882 et 4060 m.

Aucun échantillon attribué à cette espèce n'a été retrouvé dans la collection Cehlert.

20. *Platidia* (?) *incerta* : cette espèce, aujourd'hui nommée *Leptothyrella incerta*, a été trouvée dans 3 stations situées devant le banc d'Arguin et dans les Açores par le *Talisman* par des grandes profondeurs comprises entre 2295 et 2233 m.

Le Musée des Sciences conserve une valve dorsale et une ventrale (ML-ZOO-MAL-00023) récoltées par le *Talisman* le 22 août 1883 au nord de Sao Miguel (Açores) à 2295 m de profondeur (dragage 144).

21. *Cistella cistellula* : cette espèce, aujourd'hui nommée *Argyrotheca cistellula*, a été trouvée dans 4 stations situées dans les Canaries, devant le banc d'Arguin et dans les Açores par le *Talisman* par des grandes profondeurs comprises entre 1975 et 2995 m.

Aucun échantillon attribué à cette espèce n'a été retrouvé dans la collection Cehlert.

Le Muséum national d'Histoire naturelle de Paris possède dans ses collections des échantillons de divers groupes d'invertébrés provenant du *Travailleur* et du *Talisman*, dont au moins les deux espèces-types décrites par Fischer & Cehlert : *Mühlfeldtia echinata* FISCHER & CEHLERT, 1890 et *Eucalathis ergastica* FISCHER & CEHLERT, 1890 (Pierre Lozouet, comm. pers.).

### III. Les brachiopodes récoltés par *La Romanche* (1882-1883)

Dans le cadre de l'Année polaire internationale, mise en place au Congrès International de Météorologie de Rome, en avril 1879, par onze pays, la France a été chargée de l'étude scientifique (météorologique, géographique, géologique, botanique, zoologique...) en Terre de Feu et au Cap Horn (Amérique du Sud). Pour cela, elle affrète le trois-mâts barque *La Romanche* de la Marine française (figure 13), commandé par le commandant Louis-Ferdinand Martial. Il appareille le 17 juillet 1882 de Cherbourg pour mouiller le 6 septembre 1882 dans la baie Orange (ou Baie Saint-Bernard) sur l'île Hoste, située à quarante kilomètres du Cap Horn, où l'expédition établit son camp de base (Martial, 1888). Une équipe reste à terre, en Terre de Feu pour les études astronomiques, météorologiques, botaniques, zoologiques et même ethnographiques pendant que l'autre équipe longe les côtes pour les observations hydrographiques et cartographiques (figure 14). La mission se termine un an plus tard, avec le départ de toute l'équipe de la baie Orange le 3 septembre 1883 (Martial, 1889).

Les dragages de *La Romanche* ont procuré quatre espèces de brachiopodes, sous les noms : *Terebratula crossei*, *Terebratula moseleyi*, *Terebratella dorsata* var. *submutica* et *Magellania venosa* (Fischer & Cehlert, 1892b) (tableau 2). L'étude de ces exemplaires a apporté de précieux renseignements sur leurs morphologies, leurs physiologies, leurs distributions géographiques et bathymétriques.

	Identification par Chlert	Nomenclature actuelle (*)	Lieux de collecte et N de dragage
1	<i>Terebratula crossei</i> (DAVIDSON, 1882)	<i>Terebratulina kiiensis</i> DALL & PILSBRY, 1891	New Year Sound (128), Punta Arenas (dtroit de Magellan) (157)
2	<i>Terebratula (Liothyrina) moseleyi</i> (DAVIDSON, 1878)	<i>Liothyrella moseleyi</i> (DAVIDSON, 1878)	Sud-est de la Terre-de-Feu (39), Dans le canal du Beagle (93), Baie Elisa (160), longt 67° 36' W, lat 50° 52' S (4)
3	<i>Terebratella dorsata</i> (GMELIN, 1790) var. <i>submutica</i>	<i>Terebratella dorsata</i> (GMELIN, 1790)	Baie Orange (16, 17, 27, 66, 81, 116, 149, 162), Punta Arenas (24, 103, 157), Anse Saint-Martin (29), longt 68° 31' W, lat 53° 13' S (31), Sud-Est de la Terre-de-Feu (39), Canal Franklin (58), Nord de Wollaston dans la Baie Gretton (59, 166), Canal du Beagle (86, 112), Ile de l'Ouest (Malouines) (107), Baie Franaise dans les Iles Malouines (108), Baie Naturaliste (Maxwell) (119), Baie Carfort au sud de l'le de Lachappoucyekha (121, 123), New Year Sound (129), Baie d'Aayakich (143), Ile Burnet (153), Baie Saint-Nicolas dans le dtroit de Magellan (154, 158), Baie Elisa (160), à un mille au NW de Veresland (165), au Sud de Cap Horn (172), Baie du Beagle en face de Lapataya (181)
4	<i>Magellania venosa</i> (SOLANDER, 1789)	<i>Magellania venosa</i> (SOLANDER, 1789)	Baie Orange (16, 17, 116), Punta Arenas (34, 102, 103), Mouillage de Maxwell (52), Canal du Beagle (86, 112, 161), Baie Carfort au sud de l'le de Lachappoucyekha (121, 122), New Year Sound (125), Baie d'Aayakich (143), Baie Saint-Nicolas au Dtroit de Magellan (154, 158), Baie Elisa (160), à un mille au NW de Veresland (165), NW de l'le Grvy au Cap Hall (167), à un mille au SW de l'le Scott (174), Baie du Beagle en face de Lapataya (181)

Tableau 2 : Liste, lieux de collecte et numro de dragage des espces de brachiopodes actuels rcoltes par *La Romanche* en 1883. (\*) Emig *et al.* (2016), Emig (2015b) et lvarez (voir sa contribution).

1. *Terebratula crossei* : cette espce, aujourd'hui mise en synonymie avec *Terebratula kiiensis*, a t rcolte par 2 dragages : le 10 avril 1883 à New Year Sound par une profondeur de 340 m et une temprature à 100 m de 8,2°C (dragage 128) et le 25 mai 1883 à Punta Arenas par une profondeur de 18 m et une temprature de 7°C (dragage 157).

2. *Terebratula moseleyi* : cette espce, aujourd'hui nomme *Liothyrella moseleyi*, a t rcolte par 4 dragages : le 4 septembre 1882 à une latitude de 50°52'S et une longitude de 67°36'W par une profondeur de 140 m et une temprature du fond de 5,7°C (dragage 4), le 21 novembre 1882 au Sud-Est de la Terre-de-Feu par une profondeur de 220 m et une temprature du fond de 8,1°C (dragage 39), le 5 fvrier 1883 dans le canal du Beagle par une longitude de 71°45'W par une profondeur de 233 m (dragage 93) et le 1<sup>er</sup> juin 1883 dans la baie Elisa par une profondeur de 33 m et une temprature de fond de 7,5°C (dragage 160).

3. *Terebratella dorsata* var. *submutica* : cette espce, aujourd'hui nomme *Terebratella dorsata*, a t rcolte par 33 dragages entre le 9 octobre 1882 et le 1<sup>er</sup> aot 1883, par des profondeurs comprises entre 13 et 220 m.

4. *Magellania venosa* : cette espce a t rcolte par 21 dragages entre le 9 octobre 1882 et le 1<sup>er</sup> aot 1883, par des profondeurs comprises entre 13 et 143 m. Deux individus ont galement t trouvs dans l'estomac d'une morue capture à New-Year-Sound.

Le Muse des Sciences conserve deux individus entiers (ML-ZOO-MAL-00131) rcolts le 17 dcembre 1882 au Mouillage de Maxwell (Cap Horn) à 24 m de profondeur (dragage n52), à une temprature de 8°C et une valve dorsale et une ventrale (ML-ZOO-MAL-00044) rcolts le 1<sup>er</sup> juin 1883 dans la baie Elisa à 33 m de profondeur (dragage n160), à une temprature de 7,5°C.

#### IV. Les brachiopodes récoltés par le yacht l'*Hirondelle* (1886-1888)

Le prince Albert I<sup>er</sup> de Monaco était un passionné d'océanographie. Il y consacra une grande partie de sa vie. Cette passion lui vint lorsqu'il rencontra le professeur Alphonse Milne-Edwards lors de l'inauguration de l'exposition que ce dernier avait organisé au Muséum national d'Histoire naturelle de Paris pour présenter les résultats des campagnes du *Travailleur* et du *Talisman* (Estival, 2003). Il met alors à disposition des chercheurs français l'*Hirondelle* (figure 15), une goélette à coque en bois et sans machine auxiliaire, construit en Grande Bretagne en 1862. Les campagnes d'exploration zoologiques de l'*Hirondelle*, ont lieu dans l'océan Atlantique : Golfe de Gascogne (1886), Terre-Neuve dans les parages du Grand banc (1887) et l'Archipel des Açores (1888) (figures 16, 17 et 18) (Fischer & Œhlert, 1892a). Comme l'*Hirondelle* était dépourvue de moyens mécaniques, tant pour la propulsion que pour les manœuvres de force, le travail à bord n'était pas aisé. En effet, toutes les manœuvres étaient exécutées à la force des bras, il fallait 3 heures pour descendre le chalut et 10 heures pour le remonter (Estival, 2003). Par ailleurs, les pièces de travail étaient mal adaptés aux travaux scientifiques ; le laboratoire avait été installé dans l'ancien salon. C'est pour toutes ses raisons que l'*Hirondelle* fut désarmé à la fin de la campagne de 1888.

Seulement 8 espèces de brachiopodes ont été récoltées ; des informations complémentaires ont été obtenues sur leurs répartitions géographiques et bathymétriques (tableau 3).

	Identification par Œhlert	Nomenclature actuelle (*)	Dates, lieux de collecte et n° du dragage
1	<i>Terebratulina caput-serpentis</i> LINNÉ, 1767	<i>Terebratulina retusa</i> (LINNÉ, 1767)	<b>1886</b> : Golfe de Gascogne, côte Nord d'Espagne (53, 57, 59, 60, 61)
2	<i>Mühlfeldtia truncata</i> LINNÉ, 1767	<i>Megerlia truncata</i> (LINNÉ, 1767)	<b>1886</b> : Golfe de Gascogne, côte Nord d'Espagne (53, 60)
3	<i>Platidia davidsoni</i> EUDES-DESLONGCHAMPS, 1855	<i>Platidia anomioides</i> (SCACCHI & PHILIPPI, 1844, in PHILIPPI, 1844)	<b>1886</b> : Golfe de Gascogne, côte Nord d'Espagne (53, 56) ; <b>1888</b> : Açores, à l'Est de Graciosa (234)
4	<i>Crania anomala</i> MÜLLER, 1776 var. <i>turbinata</i> POLI	<i>Novocrania anomala</i> (MÜLLER, 1776)	<b>1886</b> : Golfe de Gascogne, côte Nord d'Espagne (57)
5	<i>Terebratulina septentrionalis</i> COUTHOUY, 1838	<i>Terebratulina septentrionalis</i> COUTHOUY, 1838	<b>1887</b> : Parages du Banc de Terre-Neuve (161, 162)
6	<i>Magellania septigera</i> LOVÉN, 1846	<i>Dallina septigera</i> (LOVÉN, 1846)	<b>1888</b> : Açores, entre Graciosa et Sao Jorge (242)
7	<i>Terebratula (Liothyryna) sphenoides</i> PHILIPPI, 1844	<i>Stenosarina davidsoni</i> LOGAN, 1998	<b>1888</b> : Açores, entre Graciosa et Sao Jorge (242), entre Pico et Sao Jorge (233)
8	<i>Dyscolia wyvillei</i> (DAVIDSON, 1878)	<i>Dyscolia wyvillei</i> (DAVIDSON, 1878)	<b>1888</b> : Açores, au Sud de Pico (227), entre Pico et Sao Jorge (233), A l'Est (203) et à l'Ouest (213) de Florès

Tableau 3 : Liste, date, lieu et numéro de dragage des espèces de brachiopodes actuels récoltées par l'*Hirondelle* entre 1886 et 1888. (\*) Emig *et al.* (2016) et Álvarez (voir sa contribution).

Quatre espèces ont été récoltées dans le Golfe de Gascogne, sous les noms : *Terebratulina caput-serpentis*, *Mühlfeldtia truncata*, *Platidia davidsoni* et *Crania anomalia*.

1. *Terebratulina caput-serpentis* : cette espèce, aujourd'hui nommée *Terebratulina retusa*, a été trouvée le 2 août 1886 par une profondeur de 135 m sur un fond composé de sable gris, de coquilles et de roche (station 53), le 5 août 1886 par une profondeur de 240 m sur un fond composé de roche, de gros galets et de sable (station 57), le 8 août 1886 par une profondeur de 248 m sur un fond composé de sable fin (station 59), le 9 août 1886 par une profondeur de 300 m sur un fond composé de sable, de gravier et de roche (station 60) et le 10 août 1886

par une profondeur de 185 m sur un fond composé de roche et de sable fin (station 61). Cette espèce est connue depuis longtemps dans le Golfe de Gascogne. Elle a été citée la première fois par Collard des Cherres en 1830 sur le littoral du département du Finistère (Fischer & Ehlert, 1892a).

2. *Mühlfeldtia truncata* : cette espèce, aujourd'hui nommée *Megerlia truncata*, a été trouvée le 2 août 1886 par une profondeur de 135 m sur un fond composé de sable gris, de coquilles et de roche (station 53) et le 9 août 1886 par une profondeur de 300 m sur un fond de sable, gravier et roche (station 60).

3. *Platidia davidsoni* : cette espèce aujourd'hui synonyme de *Platidia anomioides*, a été trouvée le 2 août 1886 par une profondeur de 135 m sur un fond composé de sable gris, de coquilles et de roche (station 53) et le 4 août 1886 par une profondeur de 90 m sur un fond composé de sable et de galets (station 56). Cette espèce a également été trouvée le 19 août 1888 aux Açores par une profondeur de 454 m sur un fond composé de gravier ferrugineux (station 234).

4. *Crania anomala* : cette espèce, aujourd'hui synonyme de *Novocrania anomala*, a été trouvée le 5 août 1886 par une profondeur de 240 m sur un fond composé de roche, de gros galets et de sable (station 57). Cette espèce a déjà été récoltée dans le Golfe de Gascogne, notamment lors des campagnes du *Travailleur* et du *Talisman* et sur le littoral des Asturies (Fischer & Ehlert, 1892a).

5. Une seule espèce a été récoltée dans le Banc de Terre-Neuve : *Terebratulina septentrionalis*. Elle a été trouvée le 2 août 1887 par une profondeur de 1267 m sur un fond composé de cailloux, de vase et de coquilles dans la station 161 et le 3 août 1887 par une profondeur de 155 m sur un fond composé de cailloux dans la station 162. Les individus étaient fixés sur des galets et des coquilles de gastéropodes. C'est une nouvelle station pour cette espèce qui complète sa distribution dans les mers qui baignent l'Amérique du Nord.

Le Musée des Sciences conserve deux individus entiers (ML-ZOO-MAL-00043) un individu entier, trois valves dorsales et trois ventrales (ML-ZOO-MAL-00044) une valve dorsale et une ventrale (ML-ZOO-MAL-00045) récoltés le 3 août 1887, par 155 m de profondeur (dragage n° 77 ?, plutôt station 162), sur fond caillouteux, dans les parages du Banc de Terre-Neuve « 46°50'6''N, 50°11'45''W, d'après Fischer & Ehlert, 1892a »

La collection contient également trois lots de cette espèce, un avec une étiquette sur laquelle est inscrit « *Terebratulina caput-serpentis* L. var. *septentrionalis* » (à l'époque on n'avait pas encore fait la distinction) (ML-ZOO-MAL-00049) et deux sans étiquette (ML-ZOO-MAL-00118, ML-ZOO-MAL-00120).

Quatre espèces ont été récoltées dans l'archipel des Açores, sous les noms : *Magellania septigera*, *Terebratula sphenoides*, *Dyscolia wyvillei* et *Platidia davidsoni*.

6. *Magellania septigera* : cette espèce, aujourd'hui nommée *Dallina septigera* ou *Fallax dalliniformis*, a été trouvée le 22 août 1888 entre Graciosa et Sao Jorge, par une profondeur de 861 m sur un fond composé de sable et de scories (station 242).

7. *Terebratula sphenoides* : cette espèce, aujourd'hui nommée *Stenosarina davidsoni*, a été

trouvée le 18 août 1888 entre Pico et Sao Jorge, par une profondeur de 1300 m sur un fond de vase et de sable (station 233) et le 22 août 1888 entre Graciosa et Sao Jorge, par une profondeur de 861 m sur un fond composé de sable et de scories (station 242).

8. *Dyscolia wyvillei* : cette espèce a été trouvée le 30 juillet 1888 à l'Est de Florès, par une profondeur de 1557 m sur un fond composé de sable fin et de vase blanche (station 203), le 2 août 1888 à l'Ouest de Florès, par une profondeur de 1384 m sur un fond composé de sable vaseux (station 213), le 15 août 1888 au Sud de Pico, par une profondeur de 1135 m (station 227) et le 18 août 1888 entre Pico et Sao Jorge, par une profondeur de 1300 m sur un fond composé de vase et de sable (station 233).

Les brachiopodes récoltés par l'*Hirondelle* sont conservés au Musée océanographique de Monaco.

## **V. Les brachiopodes récoltés par le Français (1903-1905)**

Après les campagnes du *Travailleur* et du *Talisman*, le soutien officiel des ministères concernés n'est pas renouvelé les années suivantes. Il faut attendre les débuts du XX<sup>e</sup> siècle avec le mécène Jean-Baptiste Charcot pour que les scientifiques aient à nouveau la possibilité de monter de véritables campagnes océanographiques. Cette première expédition française en Antarctique se déroula du 31 août 1903 (départ de Brest) au 4 mars 1905 (arrivée à Puerto Madryn, Argentine) (Charcot, 1906). Le but de l'expédition est d'explorer les côtes de la Terre de Graham (ou péninsule de Palmer) mais aussi de réaliser des observations scientifiques et des prélèvements zoologiques destinés au Muséum national d'Histoire naturelle de Paris (figure 19). Charcot avait fait construire une goélette trois-mâts spécialement conçue pour effectuer des croisières de longue durée en milieu polaire. Elle était très robuste et dotée d'une machine auxiliaire à vapeur alimentée par deux chaudières. Ce navire aurait dû s'appeler *Pourquoi pas ?*, à l'instar des précédents bateaux de Charcot, mais comme son armement avait bénéficié d'une aide financière de l'Académie des Sciences, de la Société de géographie, du ministère de la Marine et d'une souscription publique lancée par le journal *Le Matin* ; il reçut le nom de *Français* pour bien marquer son caractère national (Estival, 2003). Une grande partie du matériel scientifique, chaluts, dragues, filets, sondeurs, bouteilles et thermomètres nécessaire à cette expédition avait été prêtée par le prince Albert I<sup>er</sup> de Monaco.

L'expédition ne recueille que 21 exemplaires de brachiopodes appartenant tous à la même espèce déterminée par D. Cehlert comme étant : *Terebratula (Liothyrina) uva* BRODERIP, 1833 (Cehlert, 1906 ; Cehlert, 1908). Mais il n'indique pas le lieu précis de la récolte. Cette espèce est aujourd'hui nommée *Liothyrella uva* (BRODERIP, 1833). Sur les 21 individus récoltés, 12 formaient une véritable grappe ; ils étaient tous fixés par leurs longs pédoncules sur un grand individu. L'expédition Charcot fournit deux nouvelles stations pour cette espèce.

## **VI. Les autres espèces de brachiopodes actuels de la collection Cehlert**

La collection Cehlert comprend également de nombreuses espèces ne provenant pas des

récoltes des navires cités ci-dessus (Appendice 1) :

1. *Anakinetica cumingii* (DAVIDSON, 1852) : Nouvelle-Galle du Sud, Australie (ML-MAL-01286).
2. *Argyrotheca cuneata* (RISSO, 1826) : El Kala, Algérie (ML-ZOO-MAL-00065, ML-ZOO-MAL-00083). Des échantillons de cette espèce sont également dans la collection Monterosato.
3. *Calloria inconspicua* (SOWERBY, 1846) : détroit de Foveaux, Nouvelle-Zélande (ML-ZOO-MAL-00036, ML-MAL-01296) et non localisé (ML-ZOO-MAL-00084, ML-ZOO-MAL-00095, ML-ZOO-MAL-00114, ML-ZOO-MAL-00117, ML-ZOO-MAL-00119, ML-ZOO-MAL-00136).
4. *Coptothyris grayi* (DAVIDSON, 1852) : mer du Japon (ML-ZOO-MAL-00041, ML-ZOO-MAL-00111).
5. *Dallina floridana* (POURTALÈS, 1867) : côtes du Mexique (ML-ZOO-MAL-00048), l'échantillon a été récolté lors d'une expédition maritime des États-Unis sur les côtes du Mexique en 1869.
6. *Discradisca cumingi* (BRODERIP, 1833) : Panama (ML-MAL-01291).
7. *Frenulina sanguinolenta* (GMELIN, 1791) : détroit de Foveaux, Nouvelle-Zélande (ML-ZOO-MAL-00038) et les îles Chatham, Nouvelle-Zélande (ML-ZOO-MAL-00039).
8. *Hemithiris woodwardi* (ADAMS, 1863) : Iles de Goto, archipel du Japon (ML-MAL-01299).
9. *Joania cordata* (RISSO, 1826) : mer Méditerranée (ML-ZOO-MAL-00030), probablement El Kala, Algérie (ML-ZOO-MAL-00061 et/ou ML-ZOO-MAL-00064) et non localisé (ML-ZOO-MAL-00012). Des échantillons de cette espèce sont également dans la collection Monterosato.
10. *Kraussina rubra* (PALLAS, 1776) : sud de l'Afrique (ML-ZOO-MAL-00079, ML-ZOO-MAL-00085, ML-ZOO-MAL-00130).
11. *Lacazella mediterranea* (RISSO, 1826) : El Kala, Algérie (ML-ZOO-MAL-00029, ML-ZOO-MAL-00032, ML-ZOO-MAL-00060, ML-ZOO-MAL-00102, ML-ZOO-MAL-00115), en mer Méditerranée (ML-MAL-01288). Des échantillons de cette espèce sont également dans la collection Cailliaud.
12. *Laqueus rubellus* (SOWERBY, 1846) : probablement mer du Japon (ML-MAL-01298).
13. *Lingula anatina* LAMARCK, 1801 : Kampot, Cambodge (ML-ZOO-MAL-00051).
14. *Magellania flavescens* (LAMARCK, 1819) : côtes de l'Australie (ML-ZOO-MAL-00034, ML-ZOO-MAL-00035, ML-MAL-01297) et non localisé (ML-ZOO-MAL-00126). Des échantillons de cette espèce sont également dans la collection Cailliaud.
15. *Megerlina davidsoni* (VÉLAIN, 1877) : île Saint-Paul, océan Indien (ML-ZOO-MAL-00024, ML-ZOO-MAL-00031) et non localisé (ML-ZOO-MAL-00057, ML-ZOO-MAL-00071, ML-ZOO-MAL-00074, ML-ZOO-MAL-00097, ML-ZOO-MAL-00121, ML-ZOO-MAL-00129).
16. *Neothyris lenticularis* (DESHAYES, 1839) : îles Stewart, Nouvelle-Zélande (ML-ZOO-MAL-00040).

17. *Notosaria nigricans* (SOWERBY, 1846) : îles Chatham, Nouvelle-Zélande (ML-ZOO-MAL-00088) et Nouvelle Zélande (ML-MAL-01285).
18. *Picthothyris picta* (DILLWYN, 1817) : mer du Japon (ML-MAL-01287).
19. *Terebratalia coreanica* (ADAMS & REEVE, 1850) : mer du Japon (ML-ZOO-MAL-00042).
20. *Terebratella sanguinea* (LEACH, 1814) : détroit de Foveaux, Nouvelle-Zélande (ML-ZOO-MAL-00037) et les îles Stewart, Nouvelle-Zélande (ML-ZOO-MAL-00040).
21. Terebratellidae au genre et espèce indéterminé : certains individus n'ont pas pu être identifiés précisément car les échantillons présentaient essentiellement des juvéniles difficiles à déterminer (ML-ZOO-MAL-00089, ML-ZOO-MAL-00090, ML-ZOO-MAL-00098, ML-ZOO-MAL-00101, ML-ZOO-MAL-00122). Huit individus entiers ont été récoltés dans les îles Stewart, Nouvelle-Zélande (ML-MAL-01284).

## AUTRES COLLECTIONS DE BRACHIOPODES ACTUELS

Outre la collection Œhlert, de loin la plus importante numériquement, le Musée des Sciences possède également quelques brachiopodes actuels extraits des collections malacologiques de Monterosato et de Frédéric Cailliaud.

### I. Collection Monterosato

Tommaso di Maria Allery (1841-1927), marquis de Monterosato (Marchese di Monterosato), était un éminent spécialiste italien de la faune malacologique méditerranéenne. Contemporain de Daniel Œhlert, alors conservateur du Muséum d'Histoire naturelle de Laval, le marquis de Monterosato se rendait régulièrement en France et notamment à Paris où il s'était fait des amis parmi les malacologistes célèbres de l'époque. C'est probablement dans cette ville qu'il entre en contact avec Daniel et Pauline Œhlert, qui eux-mêmes se rendaient au Muséum national d'Histoire naturelle et à l'Institut de France tous les hivers. La collection du marquis est considérable. Il envoyait fréquemment des exemplaires de sa collection à ses collègues malacologistes pour comparaison (Dautzenberg, 1928). Daniel Œhlert acheta en 1893 une collection de coquilles vivantes de méditerranée déterminée par le marquis de Monterosato (Œhlert & Alleaume, 1934, p. 71). Aujourd'hui le Musée des Sciences possède 867 lots d'échantillons malacologiques (n° d'inventaire ML-ZOO-MAL-00410 à ML-ZOO-MAL-01276), dont 17 lots de brachiopodes actuels (tableau 4 et appendice 2).

Les brachiopodes proviennent tous de la mer Méditerranée, près de la côte Ouest de l'Italie et aux alentours des îles de la Corse, de la Sardaigne et de la Sicile (figure 20) sauf deux lots d'échantillons provenant d'Algérie et la mer Adriatique. Tous les brachiopodes ont été prélevés en 1884.



	Identification d'origine	Nomenclature actuelle (*)	Lieux de collecte	N° inventaire	Date	Nb d'ind.
1	<i>Thecidium mediterraneum</i>	<i>Lacazella mediterranea</i> (RISSO, 1826)	Skikda (Algérie)	ML-ZOO-MAL-00885	1884	1
2	<i>Terebratulula vitrea</i> BORN.	<i>Gryphus vitreus</i> (BORN, 1778)	Corse	ML-ZOO-MAL-01269	1884	1
3	<i>Terebratulula vitrea</i> BORN.		Sardaigne	ML-ZOO-MAL-01270	?	2
4	<i>Terebratulula affinis</i> Calcara ( <i>T. vitrea</i> var. <i>minor</i> )	<i>Gryphus vitreus</i> (BORN, 1778)	Lipari	ML-ZOO-MAL-01271	1884	5
5	<i>Terebratulina caput-serpentis</i> LIN.	<i>Terebratulina retusa</i> (LINNÉ, 1758)	Naples	ML-ZOO-MAL-01266	1884	6
6	<i>Terebratulina caput-serpentis</i> LINNÉ		Corse	ML-ZOO-MAL-01267	1884	6
7	<i>Terebratulina caput-serpentis</i> LIN.		Corse	ML-ZOO-MAL-01268	1884	2
8	<i>Argiope decollata</i> CHEM.	<i>Megathiris detruncata</i> (GMELIN, 1791)	Adriatique	ML-ZOO-MAL-00784	1884	3
9	<i>Cistella cuneata</i> RISSO	<i>Argyrotheca cuneata</i> (RISSO, 1826)	Palerme	ML-ZOO-MAL-01263	?	1
10	<i>Cistella cuneata</i> RISSO		Trapani	ML-ZOO-MAL-01264	1884	2
11	<i>Cistella neapolitana</i> SC.	<i>Joania cordata</i> (RISSO, 1826)	Trapani	ML-ZOO-MAL-01265	1884	3
12	<i>Cistella neapolitana</i> SC.		Palerme	ML-ZOO-MAL-00939	1884	1
13	<i>Mergerlia truncata</i> LIN. var. <i>inflata</i>	<i>Megerlia truncata</i> (LINNÉ, 1767)	Sciacca (Sicile)	ML-ZOO-MAL-01272	1884	2
14	<i>Mergerlia truncata</i> LIN. var. <i>inflata</i>		Sciacca (Sicile)	ML-ZOO-MAL-01273	1884	3
15	<i>Mergerlia truncata</i> LINNÉ		Corse	ML-ZOO-MAL-01274	1884	3
16	<i>Mergerlia truncata</i> LIN. var. <i>monstruosa</i>		Corse	ML-ZOO-MAL-01275	?	4
17	<i>Mergerlia truncata</i> LIN.		Trapani	ML-ZOO-MAL-01276	1884	6

Tableau 4 : Liste, lieu et date de collecte, nombre d'individus par tube, des espèces de brachiopodes actuels de la collection Monterosato. (\*) Emig *et al.* (2016) et Álvarez (voir sa contribution).

## II. Collection Frédéric Cailliaud

Frédéric Cailliaud (1787-1869) est minéralogiste, géologue mais aussi conchyliologiste français. Il est conservateur du Muséum d'Histoire naturelle de Nantes de 1836 à 1869 après avoir été conservateur-adjoint pendant neuf ans.

La collection est anecdotique car il n'y a que 5 lots de brachiopodes (tableau 5 et appendice 2).

	Identification d'origine	Nomenclature actuelle (*)	Lieux de collecte	N° inventaire	Date	Nb d'ind.
1	<i>Rhynchonella psittacea</i>	<i>Hemithyris psittacea</i> (GMELIN, 1790)	Terre Neuve	ML-ZOO-MAL-00345	?	2
2	<i>Thecidea mediterranea</i> RISSO s. g. <i>Lacazella</i>	<i>Lacazella mediterranea</i> (RISSO, 1826)	Côtes de Nice	ML-ZOO-MAL-00338	?	4
3	<i>Terebratulina caput-serpentis</i> LIN.	<i>Terebratulina retusa</i> (LINNÉ, 1758)	Bergen (Norvège)	ML-ZOO-MAL-00408	?	3
4	<i>Megathiris decollata</i> CHEM.	<i>Megathiris detruncata</i> (GMELIN, 1791)	Naples	ML-ZOO-MAL-00333	?	6
5	<i>Terebratulula flavescens</i> LAM <i>australis</i> QUOY	<i>Magellania flavescens</i> (LAMARCK, 1819)	Océanie	ML-ZOO-MAL-00332	?	4

Tableau 5 : Liste, lieu et date de collecte, nombre d'individus par support, des espèces de brachiopodes actuels des échantillons Frédéric Cailliaud. (\*) Emig *et al.* (2016) et Álvarez (voir sa contribution).

## Remerciements

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# Recent Brachiopods in the Œhlert Collection

by Fernando Álvarez

## Abstract

A total of 589 brachiopods (240 articulated, 184 dorsal valves and 165 ventral valves) from the Œhlert Collection have been studied, photographically illustrated, and briefly described and discussed. Systematic descriptions of 39 species included in 32 genera are provided. Sixteen of these species were described by Fischer and Œhlert. A selected synonymy for each species and the museum numbers of all the specimens are provided.

Key words: Brachiopoda; Recent; Œhlert Collection; Musée des Sciences; Laval

## Résumé

Un total de 589 brachiopodes actuels (240 articulés, 184 valves dorsales et 165 valves ventrales) de la collection Œhlert a été étudié, illustré photographiquement, et décrit brièvement et discuté. Les descriptions systématiques de 39 espèces incluses dans 32 genres ont été réalisées. Seize de ces espèces ont été décrites par Fischer et Œhlert. Une synonymie choisie pour chaque espèce et les numéros d'inventaire du musée de tous les spécimens ont été précisés.

Mots clés : Brachiopodes; actuels; collection Œhlert; Musée des Sciences; Laval

## Introduction

Most of the brachiopods described by Paul Fisher and Daniel Œhlert during the scientific expeditions in the French Navy vessels *Le Travailleur* and *Le Talisman* (years 1880, 1881, 1882, 1883), *La Romanche* (years 1882, 1883) and in the yacht *Hirondelle* of the prince Albert I<sup>er</sup> de Monaco (years 1886, 1887, 1888) are housed together with other Recent brachiopods some of them obtained by exchange with other specialists/institutions as was frequent on that time, and numerous brachiopods fossils, mostly from the '*département de la Mayenne*', in the '*Collection Daniel Œhlert*' of the '*Musée des Sciences de Laval*' (Laval, France). Although it is difficult to prove that a shell now in the Œhlert collection belonged to Œhlert at the time of its original description, the aim of the present paper is to review these Recent brachiopods in order to modernize the nomenclature and taxonomy and to re-describe all the species.

A total of 589 specimens (240 articulated, 184 dorsal valves and 165 ventral valves) belonging to 160 different lots have been studied and illustrated (see Appendix 1). Systematic descriptions of 39 species included in 32 genera are provided. Sixteen of these species were described by Fischer & Œhlert (1890b, 1891, 1892a, b). The specimens of six of the studied lots are left as Tererebratellidae genus and species indeterminate mainly because the shells available for study are only juveniles, or some important characters (e.g., loop) are not present or difficult to see, and/or there is no accompanying information about its source (locality, dredging, year, vessel etc). In fact, a considerable number of glass-tubes have been detached from the card-boards and unfortunately disconnected of any original information (possible name, locality, depth etc). Therefore, in these cases, the specific or even generic assignment can be only

tentative.

It should be mentioned that, when reading the old labels, some of the geographical names quoted may not have a direct equivalence with their present geographical use, being 'Soudan' one of the most noticeable. For Fischer and Œhlert the term 'Cotes du Soudan' is applied to the African western littoral, between Cap Bojador and Dakar (see maps with the locations of the dredgings in article by Jérôme Tréguier).

Described taxa are listed in the order in which their superfamilies appear in *Part H (Brachiopoda)* of the Revised version of the *Treatise on Invertebrate Paleontology* (Kaesler, 1997, 2000a-b, 2002, 2006; Selden, 2007) as it remains the most comprehensive and useful yet published. Below this level our classification in many groups employs the results of more recent studies (see Emig *et al.*, 2013, 2016). A selected synonymy for each species and the museum numbers of all the specimens is provided. Modern illustrations of the specimens are shown for the first time in Planches 1-79. Microphotography was conducted using an Olympus SZX7 stereomicroscope system. Photographs were obtained as digital images, and the illustrations were prepared, without digital alteration to the original images, using Adobe Photoshop 7.0 and Adobe Illustrator 7.0. An attempt has been made to associate the specimens studied with those illustrated by Fischer & Œhlert. However it should be kept in mind that as was common at that time (see comment in Álvarez & Brime, 2000, p. 2) the illustrations provided by Fischer & Œhlert passed through the hands of an illustrator who provided an artistic, symmetrical drawing of the specimens, sometimes indulging in a little cosmetic reconstruction, and either an engraver or a lithographer before it reached the scientific audience that would test and judge it.

This paper is a contribution to the project of the Laval Municipality to publish a book honouring Daniel Œhlert (1849-1920) and his wife Pauline Crié (1854-1911). Daniel Œhlert was the curator of the Muséum de Laval and also a specialist of Recent and fossil brachiopods (Tréguier, 2010, p. 30-31).

## Descriptions of species

*Repository.* All described specimens are housed in the ‘Musée des Sciences, Laval’ (Ehlerlert’s collection). Specimens are registered by a five digit number with the prefix ML-ZOO-MAL (Musée Laval-Zoologie-Malacologie) or only ‘ML-MAL’ (Musée Laval-Malacologie).

Phylum Brachiopoda DUMÉRIL, 1805

(The date on the title page is 1806 but the book was already released in November 1805; cf. Alonso-Zarazaga & Lyal, 1999, p. 222)

Subphylum Linguliformea WILLIAMS, CARLSON, BRUNTON, HOLMER & POPOV, 1996

Class Lingulata GORJANSKY & POPOV, 1985

Order Lingulida WAAGEN, 1885

**Superfamily Linguloidea MENKE, 1828**

**Family Lingulidae MENKE, 1828**

**Genus *Lingula* BRUGUIÈRE, 1791**

**Type species:** *Lingula anatina* LAMARCK, 1801 [ICZN opinion no. 1355, 1985]

**Remarks.** For discussion on the date of the work in which Bruguière erected the genus *Lingula* see Emig (2015a).

***Lingula anatina* LAMARCK, 1801  
(Planche 1A-C)**

- 1801. *Lingula anatina* LAMARCK, p. 141.
- 1881. *Lingula anatina* LAMARCK, Davidson, p. 60 (with synonymy)
- 1887. *Lingula anatina*, LAMARCK, Ehlerlert, p. 1217, 1260, figs 964, 1005a-c, 1006.
- 1888. *Lingula anatina* BRUGUIÈRE, Davidson, p. 206 (with synonymy)
- 1920. *Lingula unguis* LINNAEUS, Dall, p. 262 (with synonymy)
- 1927. *Lingula unguis* LINNAEUS, Thomson, p. 186 (with synonymy)
- 1982. *Lingula anatina* LAMARCK, Emig, p. 337 (with synonymy)
- 2010. *Lingula anatina* LAMARCK, Bitner, p. 644 (with synonymy)
- 2013. *Lingula anatina* LAMARCK, Emig, Bitner & Álvarez, p. 75.
- 2015a. *Lingula anatina* LAMARCK, Emig, p. 3 (with synonymy)
- 2015. *Lingula anatina* LAMARCK, Emig, Álvarez & Bitner, WoRMS Taxon List, p. 1.

**Material.** Two valves, a dorsal and a ventral (Planche 1A-B) fixed to a card introduced into a glass-tube glued to a card-board with an old label with the name ‘*Lingula*’ written on it and ‘Kampot (Cochinchine)’ as ‘Localité’ (Planche 1C), today Krong Kampot (Cambodia). A label

with the registered number ML-ZOO-MAL-00051 is fixed in the reverse of the card-board.

**Description.** The two valves are elongate oval with the lateral margins subparallel and broadly rounded the anterior margin, gently convex, of similar size and of bright green colour (Planche 1A-B). Externally, with distinct growth lines and lacking radial ribs ('smooth'). Valves poorly mineralized laterally and both broken posteriorly, being both pseudointerareas lost (Planche 1A-B). The visceral area extending anteriorly beyond mid dorsal valve interior and to midvalve in the ventral valve (Planche 1A-B). The dorsal central and the anterior lateral muscle scars are closely spaced and bisected by a weak median septum (Planche 1A). No remains of the pedicle or the lophophore are preserved.

**Remarks.** With the morphology preserved, *L. anatina* seems to be the closest species to which these valves should be related. For a more complete description of *L. anatina* and other close lingulids as *L. reevii* DAVIDSON, 1880, see Emig (1982, 2015a). For diagnosis of generic and suprageneric ligulidae taxa see Holmer & Popov (2000) and Emig (2003). The Cochinchine is now known as Cambodia, and these valves come from the Gulf of Thailand, formerly known as the Gulf of Siam, a shallow arm of the south China Sea (see also Fischer, 1891, p. 162).

### **Superfamily Discinoidea GRAY, 1840**

#### **Family Discinidae GRAY, 1840**

#### **Genus *Discradisca* STENZEL, 1964**

**Type species:** *Orbicula antillarum* d'ORBIGNY, 1845, by original designation.

#### ***Discradisca cumingi* (BRODERIP, 1833) (Planche 1D-H)**

1833. *Orbicula cumingii* BRODERIP, p. 124.

1888. *Discinisca cumingii* (BRODERIP), Davidson, p. 202, pl. 26, figs. 23-25 [with synonymy; *Discradisca strigata* (BRODERIP, 1833) excluded]

1920. *Discinisca cumingii* (BRODERIP), Dall, p. 277 (with synonymy)

2013a. *Discradisca cumingi* (BRODERIP), Emig, WoRMS.

2015. *Discinisca cumingii* (BRODERIP), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 1.

**Material.** Three specimens (Planche 1D-H) fixed to a card introduced into a broken glass-tube and in a plastic bag with registered number ML-MAL-01291 stick to it. In the reverse of this card nothing is written, but, in the plastic bag, with the valves, there is another card with the name '*Discinisca Cumingii* Brod. sp.' and the locality 'Panama' written on it (Planche 1E). The bigger specimen is fixed to the card by the dorsal valve and has another specimen, rather small attached to it (Planche 1D, G), the third specimen is fixed to the card by the ventral valve (Planche 1D, H)

**Description.** The shells are thin, biconvex to dorsibiconvex, subcircular to elongate oval in

outline and subconical in lateral profile (Planche 1D, F, H). The dorsal valve overlapping slightly the ventral. Colour light brownish yellow, larval shell smooth, ornamentation of postlarval shell of fine growth lines, slightly lamellose and faint ribs. Ventral valve with large depressed area around the pedicle track closed apically by a gently concave listrium. Lophophore spirolophous.

**Remarks.** The specimens of the lot ML-ZOO-MAL-01291 are similar to those commonly classified as *Discinisca lamellosa* (BRODERIP, 1833) but being thinner, less lamellose, with weaker costellae and with wide, transversely suboval pedicle track, closed apically by semicircular and gently concave listrium (Planche 1F-G).

Subphylum Craniiformea POPOV, BASSET, HOLMER & LAURIE, 1993

Class Craniata WILLIAMS, CARLSON, BRUNTON, HOLMER & POPOV, 1996

Order Craniida WAAGEN, 1885

**Superfamily Cranioidea MENKE, 1828**

**Family Craniidae MENKE, 1828**

**Genus *Novocrania* LEE & BRUNTON, 2001**

**Type species:** *Patella anomala* MÜLLER, 1776, by original designation [ICZN opinion no. 1468, 1988; see discussion in Lee & Brunton, 1986]

***Novocrania anomala* (MÜLLER, 1776)  
(Planche 1I-L)**

1776. *Patella anomala* MÜLLER, p. 237.

1888. *Crania anomala* (MÜLLER), Davidson, p. 183 (with synonymy)

1891. *Crania anomala* (MÜLLER) var. *turbinata* POLI, Fischer & Ehlert, p. 7, pl. 1, fig 1a-c (with synonymy)

1920. *Crania anomala* (MÜLLER), Dall, p. 269 (with synonymy)

1979. *Crania anomala* (MÜLLER), Brunton & Curry, p. 26 (with synonymy)

1979. *Crania anomala* (MÜLLER), Logan, p. 27 (with synonymy)

1986. *Neocrania anomala* (MÜLLER), Lee & Brunton, p. 150.

1994. *Neocrania anomala* (MÜLLER), Anadón, p. 67.

2001. *Novocrania anomala* (MÜLLER), Lee & Brunton, p. 5.

2003. *Novocrania anomala* (MÜLLER), Gaspard, p. 286.

2005. *Novocrania anomala* (MÜLLER), Álvarez & Emig, p. 105, 216 (with synonymy)

2012. *Novocrania anomala* (MÜLLER), Emig, p. 21.

2014a. *Novocrania anomala* (MÜLLER), Emig, p. 159-171 (with synonymy)

2015. *Novocrania anomala* (MÜLLER), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 2.

**Material.** Two dorsal valves fixed to a card of light blue colour (Planche 1I), introduced into a glass-tube and in a plastic bag with the registered number ML-ZOO-MAL-00104 stick to it. No label with name and/or locality is preserved together with the tube/bag. However, among the card-boards from which the tube/s have been detached there is one, and only one, with an old label with the name '*Crania anomala* Müller sp.', the 'Localité' 'Cote de Portugal' and 'Prof. 70 m' written on it (Planche 1J). I think that this was the card-board to which the glass-tube was originally fixed.

**Description.** The shell of the valves included in the glass-tube is moderately thick, endopunctate, of brown colour. The valves are convex (viewed externally), subcircular in outline and conical in lateral view, with the apex/beak situated slightly posteriorly, ornament of growth lines only, posterior margin almost straight (Planche 1K-L). In the dorsal interior, the posterior adductor muscle scars are large, rounded, thickened, widely separated and flanked by a pair of small muscle scars; the anterior adductor scars are raised above valve floor and flanked by the oblique lateral and the crescentic-shaped scars of the retractor muscles; weak myophragm bisects the muscle field; a pair of small brachial protractor muscle scars occur in a median position anteriorly to that of the anterior adductor scars, anteriorly to all the muscle scars are grooved impressions of mantle canals which are branching and radially disposed (Planche 1K-L). Lophophore not preserved.

**Remarks.** Fischer & Cœhlert (1891) identified the specimens dredged by *Le Travailleur* and *Le Talisman* (1880, 1881, 1882 and 1883) as '*Crania anomala* (Müller) var. *turbinata* Poli' (see Fischer & Cœhlert, 1891, p. 7-13, 135) although in page 140, 'Table des matières', they only listed the species, *Crania anomala*, without mentioning any variety. These authors also identified as '*Crania anomala* (Müller) var. *turbinata* Poli' the specimens dredged by the *Hirondelle* in the northern coast of Spain (see Fischer & Cœhlert, 1892a, p. 8 and 24).

The two dorsal valves preserved in the collection are conical and dark brown resembling that of the typical northeastern *Novocrania anomala*. Internally, the scars of the anterior adductor muscles are slightly elevated above the level of the surrounding shell. The scars of the dorsal retractors are prominent, crescent-shaped, distinct and slightly separated from the adductor scars which they flank. The scars of the dorsal protractors are prominent and divided medially. This muscle scar pattern is more typical of *Novocrania anomala* than of *Novocrania turbinata* in which the anterior adductor scars are elevated on prominent ridges, the scars of the dorsal protractors are small, obscure, flanking a spike-like ridge and the scars of the dorsal retractors are less distinct, not separated from that of the anterior adductors (see discussion in Logan, 1979; Brunton, 1989; Logan & Long, 2001; Álvarez & Emig, 2005; Logan, 2007).

Finally, it should be stressed that Emig (2014a) after considering the distribution of *Novocrania turbinata* and *N. anomala*, the taxonomic validity of the morphological characters used to differentiate both species and the data obtained by molecular analyses concluded that both species should be considered as synonymous (see discussion and conclusions in Emig, 2014a).



Subphylum Rhynchonelliformea WILLIAMS, CARLSON, BRUNTON, HOLMER & POPOV,  
1996

Class Rhynchonellata WILLIAMS, CARLSON, BRUNTON, HOLMER & POPOV, 1996

Order Rhynchonellida KUHN, 1949

**Superfamily Rhynchonelloidea d'ORBIGNY, 1847**

**Family Cryptoporidae MUIR-WOOD, 1955**

**Genus *Cryptopora* JEFFREYS, 1869**

**Type species:** *Cryptopora gnomon* JEFFREYS, 1869, by original designation.

***Cryptopora gnomon* JEFFREYS, 1869  
(Planche 1M)**

**Remarks.** Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Neatretia gnomon* Jeffreys sp.' written on it and 'Maroc, au large d'Agadir' (Prof. 220 m)' as 'Localité' (Planche 1M) without any label with registered number fixed in the reverse of it. These data correspond with those of the station 1, *Le Talisman* 1883, dredging 42 (23 juin) listed by Fischer & Cœhlert (1891, p. 123). There is only one difference, possibly a *lapsus calamy*, as the depth in the label is of 220 m and 2,200 m in the text (Fischer & Cœhlert, 1891, p. 123). '*Neatretia gnomon* Jeffreys sp.', currently described as *Cryptopora gnomon* JEFFREYS, 1869), has a thin, translucent, smooth shell, the ventral beak being moderately long, pointed, nearly straight with large foramen and auriculate and disjunct deltidial plates. Internally the dorsal valve has long crura that digitate distally and a characteristic median septum that rise by mid dorsal valve as a high and thin (blade-like) crest. These characters were not observed in any of the rhynchonellide shells studied in the collection.

**Superfamily Norelloidea AGER, 1959**

**Family Frieleiidæ COOPER, 1959**

**Subfamily Hispanirhynchiinae COOPER, 1959**

**Genus *Hispanirhynchia* THOMSON, 1927**

**Type species:** *Rhynchonella cornea* FISCHER in DAVIDSON, 1887, p. 171, by original designation.

***Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887)  
(Planches 1N-W, 2A-Z)**

1887. *Rhynchonella cornea* FISCHER in DAVIDSON, p. 171.

1891. *Rhynchonella (Hemithyris) cornea* FISCHER, Fischer & Cehlert, p. 13 (with synonymy)
1920. *Hemithyris cornea* (FISCHER in DAVIDSON), Dall, p. 288.
1927. *Hispanirhynchia cornea* (DAVIDSON), Thomson, p. 159.
1979. *Hispanirhynchia cornea* (DAVIDSON), Brunton & Curry, p. 34.
- 1981b. *Hispanirhynchia cornea* (FISCHER), Cooper, p. 10 (with synonymy)
- 1988a. *Hispanirhynchia cornea* (FISCHER), Logan, p. 64.
1994. *Hispanirhynchia cornea* (FISCHER), Anadón, p. 67.
2005. *Hispanirhynchia cornea* (DAVIDSON), Álvarez & Emig, p. 113, 217 (with synonymy)
- 2013a. *Hispanirhynchia cornea* (FISCHER), Emig, WoRMS.
2015. *Hispanirhynchia cornea* (FISCHER), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 3.

**Material.** A dorsal valve and a ventral, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 1N). In the reverse of the card it is written by hand 'Talisman. 9 Juillet. Drag 72. Prof 882. Loc Sahara' (Planche 1O). The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00053 fixed on it. Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Rhynchonella (Hemithyris) cornea*, Fisch.' and 'Atlantiq. Sahara; prof 882 m.' as 'Localité' written on it (Planche 1W) without any label with registered number fixed in the reverse of it, that, with all probability, is the one to which the at present loose glass-tube, was originally fixed.

Another dorsal valve and a ventral, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 2A). In the reverse of the card it appears written by hand '*Rh (H.) cornea*. Fischer 882. Sahara' (Planche 2B). The glass-tube is glued to a card-board (from which another tube have been detached) with an old label with the name '*Rhynchonella (Hemithyris) cornea*, Fisch.' written on it and 'Soudan' as 'Localité' and 'Prof. 1439 m' (Planche 2C). In the reverse of the card-board, a label with the registered number ML-ZOO-MAL-00046 is fixed.

Besides the two lots described above, there are other two in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued, unfortunately no label with name and/or locality is preserved together with the tube/bag. These lots are:

- Two articulated specimens fixed to a card (Planche 2G) without any writing on its reverse, introduced into a glass-tube. This tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00133 fixed on it.

- A dorsal valve and the umbonal regions of a ventral and a dorsal valves are loose in another glass-tube with a card with nothing written on it (Planche 2U). The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00091. Probably, one the last two tubes is the one that have been detached from the above mentioned card-board (that with the registered number ML-ZOO-MAL-00046). If so, one of the two registered numbers ML-ZOO-MAL-00091 or ML-ZOO-MAL-00133 is redundant.

**Description.** The shells are thin, translucent, of light brown-yellowish colour, impunctate, elongate-triangular in outline with greatest width anterior to midvalve (Planches 1N; 2A, G, I, J, L, M, U, X-Y). Biconvex to ventribiconvex in lateral profile (Planche 2K, P), the anterior commissure is rectimarginate to faintly unisulcate (Planche 2H, N, Q, Z). External surfaces are finely capillate and have few and poorly marked growth lines (Planche 2S, T, Y). Ventral beak short, suberect, with large, hypothyrud pedicle opening and disjunct deltidial plates (Planches 1P-S; 2D-E, R). Dorsal interior with relatively narrow, deep and transversely grooved dental sockets diverging antero-laterally (Planches 1T-U; 2F, Z). The sockets are defined postero-laterally by the relatively thickened edges of the valve, outer socket ridges and antero-medially by high and strongly overhanging ventrally inner socket ridges (Planche 1U). Outer hinge plates flat to ventrally concave, inner hinge plates subhorizontal, narrow, extending medianly from the crural bases (Planches 1T-U; 2F). There is no cardinal process but, sessile diductor muscle scars are clearly visible on the posterior ends of the hinge plates and inner socket ridges (Planche 1U) as it happens in other frieleiides (e.g., *Compsothyris racovitzae*, see Álvarez *et al.*, 2010, p. 24, fig. 9b-c). The crural base are rod-like structures on the ventro-median surface of the hinge plates, they became vertically flatter and give rise to paired crura (Planches 1U-V; 2F, Q). The crura are relatively short in comparison to those developed in other species of the family, bladellike, raduliform (cf. Álvarez *et al.*, 2010, p. 28), widely divergent anteriorly and project slightly towards the ventral valve (Planches 1V; 2Q). The distal end of each crus commonly has several solid spine-like or finger-like anteroventral projections (Planche 1V). A low and thick dorsal median ridge extends forward from the apex to about one-fourth of dorsal length; it is widest and thickest posteriorly and anteriorly divides the dorsal ends of the adductor muscles (Planches 1V; 2F, X, Z). Internally, the ventral valve presents a short and thin pedicle collar (Planches 1P-S; 2D-E, R) and prominent, cyrtomatodont hinge teeth (Planches 1P, S, R; 2D-E, W) supported by short but fairly strong dental plates, which are parallel to the plane of symmetry or slightly convergent ventrally (Planches 1R; 2E, Q). Muscular impressions in both valves confined to the posterior fourth of the shell (Planches 1V; 2D-F, X, Z), being in the dorsal valve separated by the median ridge (Planches 1V; 2F, X, Z). Pallial or gonadal marks are not impressed.

**Remarks.** The specimens of the lots described above, under the heading '**Material**', bear a resemblance to those illustrated by Fischer & Ehlert (1891, pl. 1, fig 2a-2u) but none of their drawings exactly matches with any of them. Besides this, the dredging 72, the locality 'Sahara' and the depth '882' (Planche 1N) does not appear among those listed by Fischer & Ehlert (1890a, 1891, p. 15). *Hispanirhynchia cornea* occurs in the Eastern Atlantic at a depth range of 105-2388 m (Fischer & Ehlert, 1891, p. 16; d'Hondt, 1976, p. 2; Cooper, 1981b, p. 10; Álvarez & Emig, 2005, p. 114; Zezina, 2006, p. 69; Logan 2007, p. 3088). The authorship of this species has been problematic because it has been attributed to both Fischer or Davidson (1887) as when it appeared in print for the first time (Davidson, 1887, p. 163, 182, plate 25, figs 2-4) Davidson attributed its authorship to Fischer, 1885 (*sic*) or Fischer, MS.

**Superfamily Hemithiridoidea RZHONSNITSKAIA, 1956**

**Family Hemithirididae RZHONSNITSKAIA, 1956**

**Genus *Hemithiris* d'ORBIGNY, 1847**

**Type species:** *Anomia psittacea* GMELIN, 1791, by subsequent designation of Davidson, 1852a, p. 252.

***Hemithiris woodwardi* (ADAMS, 1863)**

**(Planche 3A-G)**

1863. *Rhynchonella woodwardi* ADAMS, 1863, p. 100.  
1871. *Rhynchonella psittacea* var. *woodwardi* ADAMS, Davidson, p. 309.  
1887. *Rhynchonella psittacea* var. *woodwardi* ADAMS, Davidson, p. 168.  
1911. *Hemithiris psittacea* var. *woodwardi* (ADAMS), Schuchert, p. 269.  
1927. *Hemithiris woodwardi* (ADAMS), Thomson, p. 151.  
1959. *Hemithiris woodwardi* (ADAMS), Cooper, p. 47.  
2002. *Hemithiris woodwardi* (ADAMS), Saito & Tazawa, p. 9 (with synonymy)  
2015. *Hemithiris woodwardi* (ADAMS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 3.

**Material.** A dorsal valve and a ventral, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 3A). The glass-tube and a card-board from which the tube seems to have been detached, are enclosed in a plastic-bag with a label with the registered number ML-MAL-01299 fixed on it. Nothing is written on the card-board or in the card to which the specimens were fixed but inside the glass-tube there is a card in which it is written by hand '*Rh. psittacea* var. *woodwardi* Adams; Gotto' (Planche 3B) (see '**Remarks**' below).

**Description.** Shell of medium to large size (length = 15 mm), of light brown-greyish colour, impunctate, triangularly globose in outline, equidimensional to slightly wider than long, with greatest width near midvalve, dorsibiconvex, globose, uniplicate (Planche 3A-G). Both valves rather thick, with delicate, discontinuous and irregular radial striae and weak growth lines (Planche 3E). Ventral beak, long, suberect, with large, hypothryid pedicle opening and disjunct deltidial plates (Planche 3C-D). Dorsal interior with narrow dental sockets diverging strongly antero-laterally (Planche 3F-G). The sockets are defined postero-laterally by the relatively thickened edges of the valve, outer socket ridges and antero-medially by high, thick, overhanging ventrally inner socket ridges (Planche 3F-G). Outer hinge plates ventrally concave, there are no inner hinge plates or cardinal process (Planche 3F-G). The crura are long, strong, raduliform, widely divergent anteriorly and project distally towards the ventral valve (Planche 3F-G). The distal end of each crus commonly has several solid spine-like or finger-like anteroventral projections. A low and inconspicuous dorsal median ridge extends forward from the apex to about one-fifth of dorsal length (Planche 3F). Internally, the ventral valve presents a short and thick pedicle collar and prominent, cyrtomatodont hinge teeth supported by strong dental plates, which are parallel to the plane of symmetry (Planche 3C-D).

**Remarks.** *Hemithiris woodwardi* (Adams) was described by Adams (1863, p. 100) based on Recent specimens from Rifunsiri (= Rishiri) and Gotto (= Goto Islands), Japan (Davidson, 1887, p. 168 ; Saito & Tazawa, 2002, p. 13). The last place, 'Gotto' is the name written by hand in the card included in the glass-tube (Planche 3B). *Hemithiris woodwardi* differs from *Hemithiris psittacea* by its much broader, triangular shell outline, absence of radial strong grooves or impressed line on the valve surface and possession of a smaller and less incurved beak (Cooper, 1959, p. 47 ; Saito & Tazawa, 2002, p. 13). *H. woodwardi* is relatively common in the coasts of Japan with a depth range of 23-353 m, *H. psittacea* is rarely found in Japan and at bigger depth (Saito & Tazawa, 2002, p. 8; Logan, 2007, p. 3089; see also Zezina, 1997).

### Family Notosariidae MANCENÍDO & OWEN, 2002

#### Genus *Notosaria* COOPER, 1959

**Type species:** *Terebratula nigricans* SOWERBY, 1846, by original designation.

#### *Notosaria nigricans* (SOWERBY, 1846) (Planches 3H-Y, 4A-E)

- 1846. *Terebratula nigricans* SOWERBY, p. 91.
- 1852b. *Rhynchonella nigricans* (SOWERBY), Davidson, p. 81.
- 1852c. *Rhynchonella nigricans* (SOWERBY), Davidson, p. 375.
- 1855. *Rhynchonella nigricans* (SOWERBY), Davidson, p. 445, pl.10. fig. 18.
- 1870. *Rhynchonella nigricans* (SOWERBY), Dall, p. 152.
- 1873. *Hemithyris nigricans* (SOWERBY), Dall, p. 196.
- 1902. *Hemithyris nigricans* (SOWERBY), Suter, p. 224.
- 1923. *Tegulorhynchia nigricans* (SOWERBY), Chapman & Crespín, p. 187.
- 1927. *Tegulorhynchia nigricans* (SOWERBY), Thomson, p. 153.
- 1959. *Notosaria nigricans* (SOWERBY), Cooper, p. 48.
- 1962. *Tegulorhynchia (Notosaria) nigricans* (SOWERBY), Rudwick, p. 592.
- 1971. *Notosaria nigricans* (SOWERBY), Dawson, p. 161.
- 1974. *Notosaria nigricans nigricans* (SOWERBY), Foster, p. 49.
- 1978. *Notosaria nigricans* (SOWERBY), Lee, p. 395.
- 1979. *Notosaria nigricans nigricans* (SOWERBY), Lee & Wilson, p. 439 (with synonymy)
- 1980. *Notosaria nigricans* (SOWERBY), Zezina, p. 17. (with synonymy)
- 1981b. *Notosaria nigricans* (SOWERBY), Richardson, p. 192.
- 2015. *Notosaria nigricans* (SOWERBY), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 3.

**Material.** One articulated specimen (Planche 3H-N) fixed to a card introduced into a glass-tube glued to a card-board with an old label with the name '*Rhynchonella (Hemithyris) cornea*, Fisch.' written on it and 'Côtes du Soudan' as 'Localité' and 'prof 882' (Planche 3P). A label with the registered number ML-ZOO-MAL-00047 is fixed in the reverse of the card-board.

Besides this lot there are other two (Planches 3Q and 4A) in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These lots, assigned here to *Notosaria nigricans* (SOWERBY, 1846), are:

- A dorsal valve and a ventral belonging to the same disarticulated specimen, fixed to a card of light blue colour (Planche 3Q). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which it was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00088 stick to it (see further discussion below, in the heading '**Remarks**').

- A dorsal valve and a ventral belonging to the same disarticulated specimen, fixed to a card of pale brown colour (Planche 4A). The glass-tube and the card-board, to which it was originally glued, were introduced into a plastic bag with the registered number ML-MAL-01285 stick to it. Nothing is written on the card-board or in the card to which the specimens are fixed but inside the glass-tube there is a piece of paper with the words '*Rh. nigricans* Sowerby N<sup>ell</sup>. Zelande' written by hand (Planche 4D) and in the reverse of the paper the number '110.000'.

**Description.** The shells are moderately thick, impunctate, of black to dark brown-greyish colour, transversely subpentagonal to broadly oval and slightly globular in dorsal outline, widest at mid shell length (Planches 3H-N, Q-S, X-Y; 4A), dorsibiconvex in lateral profile (Planche 3J, L), with low dorsal fold and uniplicate anterior commissure (Planche 3M-N). The shell is sharply costate, with numerous and anteriorly crowded growth lines (Planche 3O, R, W), some are lamellose but do not developing into spines (Planche 3H-O, R, W). The ventral beak is prominent, suberect, nearly straight, with large hypothyril, foramen (Planche 3H-I); deltidial plates narrow, disjunct (Planches 3H-I, X-Y; 4C). Internally the cardinal teeth are well developed, relatively thick, corrugated and supported by short dental plates (Planches 3N, X-Y; 4C), pedicle collar relatively short, thick, transversely striated and elevated above the valve internal surface (Planches 3I, X-Y; 4C), muscle impressions large, wide, flabellate (Planche 3X-Y); pallial impressions consisting of numerous radially directed anastomosing channels. Dorsal interior with deep, corrugated sockets and thick overhanging inner sockets ridges, short but thickened, bilobed and somewhat elevated cardinal process overhanging anteriorly and with concentric growth ridges (Planches 3S-V; 4B), a pair of curved crura of raduliform type, moderately long, flattened, attached to socket ridges; outer and inner hinge plates not developed (Planches 3S-V; 4B), low and short median ridge which does not extend to the apex (Planche 3N, S, U); pallial marks numerous, primarily radial but anastomosing as in the ventral valve (Planche 4A). The bilateral asymmetry observed in some specimens (e.g., Planche 4A) may have been the result of a life habit of crowded substrates (see discussion in Lee, 1978, p. 407; Richardson, 1981b, p. 192).

**Remarks.** The morphological characteristics described above are typical of *Notosaria nigricans* (SOWERBY, 1846) (see description and discussion of this genus and species in Cooper 1959 and Lee & Wilson, 1979) and rather different of those of '*Rhynchonella (Hemithyris) cornea*, Fisch.' the name stated in the label for lot ML-ZOO-MAL-00047 (for description and illustration of *Rhynchonella (Hemithyris) cornea*, Fischer, see Fischer & Ehlert, 1891, p. 13 and pl. 1, fig. 2a-u). Consequently, the specimen of the lot ML-ZOO-MAL-00047, illustrated here in Planche 3H-O, should come from the waters around New Zealand and not from the 'Côtes du Soudan'

as labelled (Planche 3P).

Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Rhynchonella nigricans* Sby.' written on it and 'Chatham Islands. New Zealand.' as 'Localité' (Planche 4E) without any label with registered number fixed in the reverse of it. From this card-board two glass-tubes have been detached. One of these tubes could be the loose glass tube with a dorsal valve and a ventral valve enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00088 fixed on it.

The *Chatham Islands*, about 800 km to the east of New Zealand (latitude 44°S, Longitude 176°E) are among the localities listed By Lee (1978, p. 395) for *Notosaria nigricans nigricans* (Sowerby).

Order Thecideida ELLIOTT, 1958

Superfamily Thecideoidea GRAY, 1840

Family Thecideidae GRAY, 1840

Subfamily Lacazellinae BACKHAUS, 1959

Genus *Lacazella* MUNIER-CHALMAS, 1881

**Type species:** *Thecidea mediterranea* RISSO, 1826, by original designation.

***Lacazella mediterranea* (RISSO, 1826)**  
**(Planches 4F-BB, 5A-CC, 6A-DD, 7A-JJ)**

- 1826. *Thecidea mediterranea* RISSO, p. 394.
- 1861. *Thecidium mediterraneum* (RISSO), Lacaze-Duthiers, p. 259.
- 1881. *Thecidea mediterranea* RISSO, Munier-Chalmas, 1881, p. 279.
- 1887. *Thecidea (Lacazella) Mediterranea*, RISSO, Cehlert, p. 1215, 1330, figs 961, 1132.
- 1887. *Thecidium mediterraneum* (RISSO), Davidson, p. 156.
- 1920. *Lacazella mediterranea* (RISSO), Dall, p. 281 (with synonymy)
- 1927. *Lacazella mediterranea* (RISSO), Thomson, p. 141 (with synonymy)
- 1979. *Lacazella mediterranea* (RISSO), Logan, p. 73 (with synonymy)
- 2005. *Lacazella mediterranea* (RISSO), Álvarez & Emig, p. 117, 218 (with synonymy)
- 2012. *Lacazella mediterranea* (RISSO), Emig, p. 21 (with synonymy)
- 2015. *Lacazella mediterranea* (RISSO), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 4.

**Material.** Two articulated specimens fixed to a card (Planche 4F-H) introduced into a glass-tube glued to a card-board with an old label with the name '*Lacazella Mediterranea*, Risso.' written on it and 'La Calle, Algérie' as 'Localité' (Planche 4G), today El Kala, near the Tunisian border. A label with the registered number ML-ZOO-MAL-00032 is fixed in the reverse of the card-board.

Besides this lot, there are other five (Planches 4I-BB, 5A-CC, 6A-DD, 7A-FF) in which the glass-tubes containing the specimens have been detached from the card-board(s) to which they were originally glued. These lots are:

- Twenty articulated specimens plus a dorsal and three ventral valves (Planches 4I-BB, 5A-J, N) together with an articulated and small *Megerlia* (Planche 5K), an articulated bivalve (*Arca?*) (Planche 5L) and a bryozoan's colony (Planche 5M) loose in a glass-tube with a light blue card with nothing written on it. The tube and the card-board, to which it was originally glued, were kept together in a plastic bag. The card-board has an old label with the name '*Lacazella Mediterranea*, Risso.' written on it and 'Méditerranée' as 'Localité' (Planche 5N). In the reverse of the card-board, label with the registered number ML-ZOO-MAL-00029 is fixed.

- Another articulated specimen, a ventral valve and three dorsal fixed to a card of black colour and with nothing written on it, introduced into a glass-tube and in a plastic bag with the registered number ML-ZOO-MAL-00060 stick to it (Planche 5O-X).

- Other four dorsal valves and two ventral fixed to a card of light blue colour and with nothing written on it, introduced into a glass-tube and in a plastic bag with the registered number ML-ZOO-MAL-00102 stick to it (Planches 5Y-CC, 6A-G).

- Another ventral valve and ten articulated specimens are loose in another glass-tube with a light blue card with nothing written on it. The tube was introduced into a plastic bag with the registered number ML-ZOO-MAL-00115 stick to it (Planches 6H-DD, 7A-P).

- Two articulated specimens, a dorsal valve and a ventral fixed to a card of pale brown colour and with nothing written on it (Planche 7T), and a piece of paper with the words '*Lacazella mediterranea*, Risso sp. Méditerranée' written by hand (Planche 7R) (in the reverse of this paper the number '20' is written; Planche 7S), introduced into a glass-tube and in a plastic bag with the registered number ML-MAL-01288 stick to it (Planche 7Q, R). In the plastic bag there is also a card board from which the glass tube seems to have been detached. In this card board, its reverse or in the old label fixed to it, nothing is written (Planche 7Q).

Finally, among the 73 card-boards lacking registered number and from which the glass-tubes have been detached -and both tubes and card-boards regrettably separated-, there are four from which the glass-tubes, may be those of four of the five lots listed above, may have been detached. One of these card-boards has an old label with the name '*Lacazella Mediterranea*, Risso.' written on it and 'Barres de Corail, La Calle, Algérie' as 'Localité' (Planche 7JJ); two with an old label with the name '*Lacazella Mediterranea*, Risso.' written on it and 'La Calle' as 'Localité' (Planche 7GG, II); and the last one, with an old label with the name '*Lacazella Mediterranea*, Risso.' written on it and 'Méditerranée' as 'Localité' (Planche 7HH). No registered numbers were fixed in the reverse of any of these four card-boards.

**Description.** Shells are small, pale brown in colour, smooth or with irregular lamellae (e.g., Planches 4Q, 5W, 6I, V-X), ventribiconvex (e.g., Planches 4J; 5A-B, X; 6V-X; 7H-I, W-Y), of irregular shape and endopunctate. The ventral interarea is well developed, with convex and well differentiated pseudodeltidium (e.g., Planches 4K, N-P, R-V, X-BB; 5C, E-J, S-T, U-V, X; 6D-I, P, U, CC-DD; 7U, X-Y, AA-CC). Hinge line straight slightly smaller than the maximum width,



which is near midvalve (e.g., Planches 4N, P-U, Z-BB; 5C, U; 6I, U, CC-DD). Anterior commissure rectimarginate to slightly uniplicate (e.g., Planches 4H, Q; 5J; 6E, J-M, S, X-Y; 7A-F, W). The shell interior is tuberculate (e.g., Planches 4H, L-M, Q; 5D-J, Q-T, Z-AA; 6A-E, H, L-N, T, Y-Z; 7E, J-L, N, DD-FF). The dorsal valve is weakly convex, almost circular and with hypercline interarea; and internally with complex brachidium, with brachial lobes interdigitating with ramuli (cf. Baker, 2006, p. 1960; see Planches 4H, L-M, Q; 5D, P-R, Z-CC; 6A-C, L-O, S-T, Y-Z; 7E-F, N, DD-FF); hinge sockets flanking prominent subrectangular, slightly concave (in ventral view) cardinal process, prominent, projecting postero-ventrally (e.g., Planches 5D; P-R, Z-BB; 6A-C, T, Z; 7 DD-FF). Ventral valve interior with two small plates within the umbo (hemispondylium) supported by a short median septum and two hinge teeth (e.g., Planches 5E-J; 6D-F, L, S; 7D, BB-CC). Lophophore ptycholphous (e.g., Planche 5AA-CC)

**Remaks.** *Lacazella mediterranea* is a shelf water species of cementing habit, most commonly occurring on the continental shelf off Algeria and Tunisia, where it inhabits crevices within coralligène (Vaissière & Fredj, 1963; Logan, 1979). Adults are sessile forms cemented by the ventral valve to hard substrates (e.g., red corals, see Planche 7A-L). The shell shape of the individuals in these commonly crowded and clustered populations are irregular (e.g., Planche 7A-L, Z).

In the revised lots no specimens had the brachial apparatus consisting in two crescentic, lateral ramuli and posterior, upraised median ridge divided into short septules, troughs of ramuli perforate, brachial lobes interdigitating with ramuli and septules (Logan, 1988b, p. 549; Baker, 2006, p. 1962) characteristic of the externally similar, although relatively larger and elongate, North Atlantic species *Pajaudina atlantica* LOGAN, 1988. The brachidium in *Lacazella* has wide median *ramus* that expands posteriorly while in *Pajaudina* the median *ramus* interdigitate with descending apparatus (see Logan, 1979, plate 10 figs 3-5, 8; 1988 b, fig. 4-6, 12-14, 16-19; Álvarez & Emig, 2005, figs 34 and 35; Baker, 2006 figs 1304 4c-d, 1305 1b-c).

The lots ML-ZOO-MAL-00032, ML-ZOO-MAL-00029, ML-ZOO-MAL-00060, ML-ZOO-MAL-00102 and ML-ZOO-MAL-00115 illustrated here in Planches 4F-BB, 5A-CC, 6A-DD, 7A-JJ probably came from the 'Barres de Corail, La Calle, Algérie' (Planche 7GG-JJ). 'La Calle', now known as 'El Kala' is a municipality in the 'El Tarf' wilaya (Algeria).

Order Terebratulida WAAGEN, 1883

Suborder Terebratulidina WAAGEN, 1883

**Superfamily Terebratuloidea GRAY, 1840**

**Family Terebratulidae GRAY, 1840**

**Subfamily Gryphinae SAHNI, 1929**

**Genus Gryphus MEGERLE von MÜHLFELDT, 1811**

**Type species:** *Anomia vitrea* BORN, 1778, by original designation.

***Gryphus vitreus* (BORN, 1778)**  
**(Planches 8A-MM, 9A-R)**

1778. *Anomia vitrea* BORN, p. 106.  
1801. *Terebratula vitrea* (BORN), Lamarck, p. 139.  
1811. *Gryphus vitreus* (BORN), Megerle von Mühlfeldt, p. 64.  
1879. *Liothyris vitrea* (BORN), Douvillé, p. 266.  
1886. *Liothyris vitrea* (BORN), Davidson, p. 6.  
1887. *Terebratula (Liothyrina) vitrea* (BORN), Cehlert, p. 1314, 1316.  
1891. *Terebratula (Liothyrina) vitrea* (BORN), Fischer & Cehlert, p. 51.  
1927. *Gryphus vitreus* (BORN), Thomson, p. 193. (with synonymy)  
1979. *Gryphus vitreus* (BORN), Brunton & Curry, p. 36. (with synonymy)  
1979. *Gryphus vitreus* (BORN), Logan, p. 32. (with synonymy)  
1986. *Gryphus vitreus* (BORN), Boullier *et al.*, p. 179-186.  
1994. *Gryphus vitreus* (BORN), Anadón, p. 67.  
2005. *Gryphus vitreus* (BORN), Álvarez & Emig, p. 130, 219.  
2015. *Gryphus vitreus* (BORN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 7.

**Material.** An articulated specimen, a disarticulated ventral valve and the dorsal counterpart, fixed to a card of blue colour (Planche 8A) introduced into a glass-tube. In the reverse of the card it appears written by hand '*Travailleur. 6. Juillet. Drag. 3.*' (Planche 8B). The glass-tube that was detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00025 stick to it, (see further discussion below, in the heading '**Remarks**').

Another articulated specimen loose in a broken glass-tube (Planche 8G). In the interior of the glass-tube there is also a light blue card from which the specimen seems to have been detached. In the reverse of the card it appears written by hand '*Vitrea Méditerranée*' (Planche 8H). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00026 stick to it.

In another glass-tube there are a dorsal valve and a ventral, both eroded and probably belonging to the same disarticulated specimen (Planche 8Q-R, T-U), and piece of paper with the letters '*rranée*' written by hand (Planche 8X). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00077 stick to it.

A ventral valve and a broken dorsal loose in a broken glass-tube (Planche 8Y). In the interior of the glass-tube there is also a light green card from which the valves seem to have been detached. In the reverse of the card nothing is written. The broken glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00112 stick to it.

Two articulated specimens fixed to a card of blue colour introduced into a glass-tube (Planche

8CC). In the reverse of the card nothing is written. The broken glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00123 stick to it.

A ventral valve (Planche 8DD-FF) loose in a glass-tube. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00128 stick to it.

An articulated specimen loose in a glass-tube (Planche 8GG). In the interior of the glass-tube there is also a light blue card from which the specimen seems to have been detached. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00137 stick to it.

A ventral valve fixed to a light blue card and a dorsal, probably belonging to the same specimen, loose in a glass-tube (Planche 9A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00105 stick to it. As the loop is not preserved the specimen is doubtfully assigned to *Gryphus vitreus*.

Another articulated specimen this of big size (L = 39 mm) loose in a glass-tube (Planche 9F). In the interior of the glass-tube there is also a pale brown card from which the specimen seems to have been detached. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01294 stick to it.

**Description.** Shell of medium to large size, white to pale grey in colour. The shell is elongate oval in outline and biconvex to ventribiconvex in lateral profile, with both valves strongly convex (e.g., Planches 8C, I-P, CC, HH-LL; 9F-M). Surface of both valves smooth with numerous and poorly marked growth lines (Planches 8C-E, I-N, Z, HH; 9E-I). Shell finely endopunctate, thin, semi-transparent but thickening considerably with growth. Posteriorly the shell wall is much thickened with the growing of tertiary layer prisms, causing the shell to tip posteriorly when placed on a flat surface (e.g., Brunton & Curry, 1979, p. 36). Anterior commissure rectimarginate to broadly uniplicate (e.g., Planches 8N-O, LL-MM; 9J-K). The ventral umbo is small and the deltidial plates fuse dorsally or anteriorly forming symphytium (partially visible) and leaving posteriorly a small to medium, epithyrid, marginate to labiate pedicle foramen (Planches 8F, K, V, AA, CC, EE-FF, HH; 9B-C, G), with short pedicle collar (e.g., 8E, AA; 9C). Hinge teeth cyrtomatodont, without dental plates (Planches 8F, V, AA, EE-FF; 9B). Dorsal median septum lacking (Planche 8D, Y). Small, oval-shaped muscle impression in both valves, relatively weak except in large-size ventral valves (Planche 8D-E, Y, FF). Cardinalio with small, transverse and slightly concave cardinal process (Planches 8D, BB; 9L). The outer hinge plates are narrowly triangular, slightly concave, inner hinge plates not developed (Planches 8D, BB; 9L). The crural bases are narrow and flush with inner margin of outer hinge plates (Planches 8BB; 9L). Crural processes scooplake in side view, anterior of midloop (Planche 9L). Loop short, about one quarter of the valve length, subtriangular, attached to cardinalium by short and narrow crura (Planches 8MM; 9L). Descending branches diverging slightly, transverse band

broad, gently arched ventromedially (Planches 8MM; 9L).

**Remarks.** Fischer & C hlert described and illustrated '*Terebratula (Liothyrina) vitrea* Born, sp' (1891, p. 51 and plate 3, fig 7a-h). Eleven stations, expedition '*Travailleur*', dredgings 1, 3, 5, 19, 37, 40 done between the fourth of July and the 15th of August 1881 and dredgings 1, 2, 3, 32, 58 done in July 1882, plus another three dredgings (65, 74 and 121) with the '*Talisman*' in July 1883 provided specimens of '*Terebratula (Liothyrina) vitrea*'. '*Liothyrina vitrea* Born' is described here as *Gryphus vitreus* (BORN, 1778). Unfortunately, in the C hlert collection all glass-tubes have been detached from the card-boards to which they were originally glued. So, we do not have information of the taxon-name of the specimens described by Fischer & C hlert, nor about the localities, date or depths from where they were dredged. As stated above, in the heading '**Material**', only the specimens included in the plastic bag with the registered number ML-ZOO-MAL-00025 fixed on it have some information. In the reverse of the card it appears written by hand the words '*Travailleur*. 6. Juillet. Drag. 3.' (see Planche 8B). Fischer & C hlert (1891, p. 53) listed between the stations done with the '*Travailleur*' three dredgings done the 6th of July 1882 in the 'Golfe de Gascogne' at a depth of 564 m (dredging 1), 608 m (dredging 2) and 512 m (dredging 3) on which specimens of '*Terebratulina (Liothyrina) vitrea* Born, sp' were dredged. Between the card-boards from which the glass-tubes were detached there is one (Planche 9O) with the name '*Liothyrina vitrea* Born' and 'Golfe de Gascogne' and 608 m as locality and depth respectively written on its old label from which two glass-tubes were detached (Planche 9O). This depth (608 m) corresponds with that of 'Dragage 2' and not of the 'Dragage 3' (512) of Fischer & C hlert (1891, p. 53). So, although there seems to be some confusion between the dredging numbers and depths written in the paper (Fischer & C hlert, 1891, p. 53) and in the old label attached to the card-board, the locality name for the dredgings 1-3 done the 6th of July 1882 is the 'Golfe of Gascogne'. Four other card-boards with the name '*Liothyrina vitrea* Born' written by hand in the old label fixed to it, and from which the glass-tubes have been detached are kept with the collection although separated from the specimens. Three of them having 'M diterran e' as locality (Planche 9P-R) as it was specified by the dredgings 3 and 5 done the 5th of July of 1881 with the '*Travailleur*', and the last card board with an old label with the name 'Golfe de Cadix' and depth of '440'm (Planche 9N), this locality and depth corresponds with that of 'Dragage 32' done the 25 of July of 1882 also with the '*Travailleur*' (Fischer & C hlert, 1891, p. 53). Considering all this information, it is most likely that the specimens of the lot ML-ZOO-MAL-00025 correspond to one of tubes attached to the card-board with 'Golfe of Gascogne' as locality and the other eight lots, one will correspond to the second tube detached from this card-board, another to the tube detached from the card-board with 'Golfe de Cadix' as locality and the last three lots to the tubes detached from the card-board with "M diterran e' as locality. These localities cited by Fischer & C hlert (1891, p. 53) are included in the distribution now considered for *Gryphus vitreus*, species that has a wide distribution in the Mediterranean sea and in the East Atlantic (see  lvarez & Emig, 2005, p. 132; Logan, 2007, p. 3092).

The specimens attributed here to *Gryphus vitreus* externally resemble those of *Stenosarina davidsoni* LOGAN, 1998, that are described below. The main difference between these two species are related with the shape of the loop, triangular with descending branches short and slightly diverging anteriorly in *Gryphus vitreus* (Planches 8MM, 9L) and relatively long,

parallel or converging slightly distally in *Stenosarina davidsoni* (see description and illustrations below). Unfortunately these characteristics are difficult to study in the specimens revised as in most of them the loop is broken or the specimens strongly articulated, so, most of the specimens listed in the heading '**Material**' are doubtfully assigned to *Gryphus vitreus*. Anyway, the short, triangular loop characteristic of the *Gryphus* species seems to be present in at least the articulated specimens of the lots ML-ZOO-MAL-00025, ML-ZOO-MAL-00137 and ML-MAL-O1294.

The ventral valve of the lot ML-ZOO-MAL-00128, illustrated in Planche 8FF resembles that of Fischer & Cœhlert (1891, pl. 3 fig 7f), and the articulated specimen ML-ZOO-MAL-00026, illustrated in Planche 8I-P looks like that illustrated by Fischer & Cœhlert (1891, pl. 3, fig. 7a-d).

### **Subfamily Dallithyridinae KATZ & POPOV, 1974**

#### **Genus *Stenosarina* COOPER, 1977**

**Type species:** *Stenosarina angustata* COOPER, 1977, by original designation.

#### ***Stenosarina davidsoni* LOGAN, 1998 (Planches 9S-EE, 10A-Z, 11A-X, 12A-D)**

- 1878. *Terebratula vitrea* var. *sphenoidea* JEFFREYS, p. 404. (*non* PHILIPPI, 1844)
- 1886. *Liothyris sphenoidea* (JEFFREYS), Davidson, p. 12.
- 1890a. *Terebratula (Liothyrina) sphenoidea* (PHILIPPI), Fischer & Cœhlert, p. 120.
- 1891. *Terebratula (Liothyrina) sphenoidea* (PHILIPPI), Fischer & Cœhlert, p. 58.
- 1892a *Terebratula (Liothyrina) sphenoidea* (PHILIPPI), Fischer & Cœhlert, p. 19 (with synonymy)
- 1908. *Liothyrina sphenoidea* (JEFFREYS), Blochmann, p. 619.
- 1959. *Dallithyris sphenoidea* (JEFFREYS), Muir-Wood, p. 304.
- 1988a. *Stenosarina sphenoidea* (JEFFREYS), Logan, p. 64.
- 1998. *Stenosarina davidsoni* LOGAN, p. 554.
- 2005. *Stenosarina davidsoni* LOGAN, Álvarez & Emig, p. 127, 219.
- 2006. *Stenosarina davidsoni* LOGAN, Zezina, p. 70.
- 2015. *Stenosarina davidsoni* LOGAN, Emig, Álvarez & Bitner, WoRMS Taxon List, p. 7.

**Material.** An articulated specimen, a ventral valve and a dorsal probably the counterpart of the preceding, fixed to a card of blue colour, introduced into a glass-tube glued to a card-board with an old label with the name '*Liothyrina sphenoidea*, Phillippi.' written on it and 'Nord de l'Espagne' as 'Localité' and 'Etage 512' (512 should be not the 'Etage' but the 'Profondeur') (Planches 9S-EE, 10A). A label with the registered number ML-ZOO-MAL-00013 is fixed in the reverse of the card-board. In the reverse of the blue card with the specimens it appears written by hand '*Travailleur* 1882, 6. Juillet. Dr. 3, *L. sphenoidea*.' (Planche 10A).

Another articulated specimen, fixed to a card of light blue colour, introduced into a glass-tube together with a loose ventral valve and a dorsal, probably the counterpart of the preceding (Planche 10B). In the reverse of the card it appears written by hand '*Travailleur* 1882, 6. Juillet. Drag. III, *L. sphenoidea*.' (Planche 10L). The glass-tube has been detached from the card-board to which was originally glued, but tube and card-board are kept together in a plastic bag. The card-board has an old label stick to it with the name '*Liothyryna sphenoidea*, Philippi.' written on it and 'Nord de l'Espagne' as 'Localité' and 'Prof. 512 m' (Planche 10K). A label with the registered number ML-ZOO-MAL-00015 is fixed in the reverse of the card-board.

Besides the above two lots there are other nine in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- An articulated specimen, a ventral valve and a dorsal valve belonging to the same disarticulated specimen, fixed to a glass-slide with a card of bright black colour below and introduced into a broken glass-tube (Planche 10M). In the reverse of the card nothing is written. The broken glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00086 stick to it.

- A ventral valve and a dorsal valve belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 10T). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00087 stick to it.

- Two disarticulated dorsal valves and two ventral, slightly broken and probably belonging to two disarticulated specimens, fixed to a card introduced into a glass-tube (Planche 10Y). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00094 stick to it.

- A ventral valve and a dorsal belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 10Z). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00124 stick to it.

- Another ventral valve and a dorsal belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 11A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00134 stick to it.

- A ventral valve and a dorsal belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 11I). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00140 stick to it.

- A ventral valve (Planche 11L) is loose in another glass-tube with a card with nothing written on it, and a piece of paper with the words '*L. sphenoidea*, *Talisman*, Drag 71, Prof 640, Loc.

Sahara, Côtes du Soudan' written by hand (Planche 11N). The glass-tube and the card-board to which probably was originally glued, are enclosed in a plastic-bag with a label with the registered number ML-MAL-01279. In the card-board and its reverse nothing is written. It should be noted that among the stations done with the '*Talisman*', Fischer & Cœhlert (1891, p. 60) listed two (17 and 18) with dredgings done the 9th of July 1883 in the 'Côtes du Soudan' on which specimens of '*Terebratula (Liothyryna) sphenoidea* Philippi' were recovered, however no dredging 71 was listed.

- A ventral valve and a highly fragmented dorsal valve probably belonging to the same disarticulated specimen are loose in a broken glass-tube (Planche 11O) with a card with nothing written on it and a piece of paper with the words '*Liothyryna sphenoidea*, Philippi, Trab. 82, 25 Juillet, Dr XXXII, Prof 440, Sud de l'Espagne' written by hand (Planche 11P). The pieces of the broken glass-tube and the card-board to which probably was originally glued, are enclosed in a plastic-bag with a label with the registered number ML-MAL-01280. In the card-board and its reverse nothing is written. The information written in the piece of paper (Planche 11P) corresponds with that included by Fischer & Cœhlert (1891, p. 60) for the 'Station 9' '*Travailleur* 1882. Dragage 32. - 25 juillet.- Profondeur 440 m. Sud de l'Espagne'.

- A ventral valve (Planche 11Q) is loose in a broken glass-tube with a pale brown card with nothing written on it and a small white card with the words '*Liothyryna sphenoidea*, Philippi, Golfe de Gascogne' written by hand (Planche 11R). The glass-tube and the card-board to which probably was originally glued, are enclosed in a plastic-bag with a label with the registered number ML-MAL-01290. In the card-board and its reverse nothing is written. In this paper we tentatively assigned this ventral valve to *Stenosarina davidsoni* LOGAN, 1998 (see further discussion below, in the heading '**Remarks**').

**Description.** The shells are of medium size, translucent, white, thin, and of longitudinally ovate to subtriangular or rounded pentagonal outline, with maximum width in the anterior half of the shell, close to mid length (Planches 9U, Z; 10C, I, M, T, Z; 11A-B, I-J, L, O, Q, S). Biconvex to ventribiconvex in lateral profile (Planches 9W-Y; 10F-G), the anterior commissure is rectimarginate (Planches 9W; 10G; W; 11G). Surface smooth with few and poorly marked growth lines (Planches 10H, N-O, T; 11A, I-J, L). Ventral beak short, strongly truncated and with a large and rounded pedicle foramen in permesothyrid position, symphytium externally concave (Planches 9U-V, X-AA; 10C-F, I-J, M, S, T, X; 11B, I-M, S-T). Dorsal interior with a small and semieliptic cardinal process (Planches 9BB-EE; 10O-R, U-W; 11E-H, J-K). The external hinge plates are narrow, long and ventrally concave being the base of the crura placed on their internal margins (Planches 9BB-EE; 10O-R, U-W; 11E-H, J-K). The crura are relatively short and thin and the crural processes very short. The brachidium is short, narrow, and rectangular, with the descending lamellae large and parallel (Planches 9DD-EE; 10R, U-V; 11J-K). The transverse band is wide, long, slightly inclined posteriorly, with well developed and ventrally directed, median fold and the anterior edge emarginate (Planches 9BB-EE; 10O-R, U-W; 11E-H, J-K). Internally, the ventral valve presents two small cardinal teeth and a short pedicle collar (Planches 9Z-AA; 10I-J, S, X; 11B-D, I, M, S-X). The shell, as in other terebratulides, is endopunctate (e.g., Planche 10H).

**Remarks.** The articulated specimen of the lot ML-ZOO-MAL-00013, illustrated in Planche 9U-Y is very similar to that illustrated by Fischer & Cœhlert (1891, pl. 3, fig. 8a-d) from the station number seven, *Le Travailleur*, 1882, 'dragage 3 – 6 juillet.- Profondeur 512 m. Nord de l'Espagne' (see Fischer & Cœhlert, 1891, p. 60). The disarticulated valves, of the previous lot, illustrated in Planche 9S (see also 9Z-AA and 9BB-EE) resemble those of Fischer & Cœhlert (1891, pl. 3 fig 8e-g). The disarticulated valves of the lot ML-ZOO-MAL-00087, illustrated in Planche 10T resemble those figured by Fischer & Cœhlert (1891, pl 3, fig 8l-m). The ventral valve shows the mantle canal system partially highlighted with black ink (compare Planche 10T with Fischer & Cœhlert 1891, pl 3, fig. 8m). No information is included with the glass-tube containing the last lot.

The specific and generic assignment of these Recent brachiopods, that typically occurs in the Easter Atlantic, was widely discussed by Fischer & Cœhlert (1890a, b, 1891, 1892a), Cooper (1981b), Logan (1988a, 1998), Gaspard (2003) and more recently by Álvarez & Emig in their monograph on both the coasts of the Iberian Peninsula and the Balearic Islands (2005, p. 129; see also references quoted therein). In this paper, Logan (1998, p. 554) and Álvarez & Emig (2005, p. 127) are followed, and these brachiopods accordingly assigned to *Stenosarina davidsoni* LOGAN, 1998.

The ventral valve of the lot ML-MAL-01290 (Planche 11Q, S-X) although similar to that of *Fallax dalliniformis* ATKINS, 1960, and its homeomorphic *Dallina septigera* (Lovén), differs from the former in lacking the short dental plates present in *Fallax*, and from both in having the anterior commissure almost rectimarginate in opposition to the slightly parasulcate anterior commissure developed in species of *Fallax* and *Dallina* (see further below, in the description and illustrations of these taxa). So, in this paper this ventral valve is tentatively assigned to *Stenosarina davidsoni* LOGAN, 1998. To be sure, the type of loop should be known but unfortunately, in this lot ML-MAL-01290 (Planche 11Q) there is no dorsal valve that would allow to check the loop, short in *Stenosarina davidsoni* (e.g., Planches 9BB-EE; 10O-R, T-W; 11A, I-K) and long but entirely free from septum in *Dallina septigera* (LOVÉN, 1845) and long but connected to median septum in *Fallax*.

Among the card-boards from which the glass-tubes have been detached there are four with an old label with the name '*Liothyrina sphenoides* Philippi sp.' written on it and '*Golfe de Gascogne*' (prof. 564 and 608 m) or '*Nord de l'Espagne*' (Prof. 512 m)' as '*Localities*' (Planche 12A-D) without any label with registered number fixed in the reverse of them. These data correspond with those of the stations 5, 6 and 7 *Travailleur* 1882, 'dragages' 1, 2 and 3 and 74 (6 juillet) listed by Fischer & Cœhlert (1891, p. 60). '*Liothyrina sphenoides* Philippi sp.' is described here as *Stenosarina davidsoni* LOGAN, 1998.



**Superfamily Cancellothyridoidea THOMSON, 1926**

**Family Cancellothyrididae THOMSON, 1926**

**Subfamily Cancellothyridinae THOMSON, 1926**

**Genus *Terebratulina* d'ORBIGNY, 1847**

**Type species:** *Anomia retusa* LINNAEUS, 1758, p. 701, by original designation

***Terebratulina retusa* (LINNAEUS, 1758)  
(Planches 12E-DD, 13A-II, 14A-II, 15A-C, 17A-C)**

1758. *Anomia retusa* LINNAEUS, p. 701.  
1767. *Anomia caputserpentis* LINNAEUS, p. 1153 (*non* LINNAEUS, 1758).  
1788. *Terebratula caputserpentis* (LINNAEUS), Retzius, p. 13.  
1788. *Terebratula retusa* (LINNAEUS), Retzius, p. 14.  
1795. *Criopoderma caputserpentis* (LINNAEUS), Poli, p. 255.  
1826. *Terebratulina emarginata* RISSO, p. 388.  
1847. *Terebratulina caputserpentis* (LINNAEUS), d'Orbigny, p. 268.  
1886. *Terebratulina caputserpentis* (LINNAEUS), Davidson, p. 17.  
1887. *Terebratulina caput-serpentis* (LINNAEUS), C̈ehlert, p. 1211, 1229, 1314, figs 952, 979A-B, 1102, pl. 15, fig. 3.  
1890a. *Terebratulina caput-serpentis* (LINNAEUS), Fischer & C̈ehlert, p. 120.  
1891. *Terebratulina caput-serpentis* (LINNAEUS), Fisher & C̈ehlert, p. 29 (with synonymy)  
1892a. *Terebratulina caput-serpentis* (LINNAEUS), Fischer & C̈ehlert, p. 8 (with synonymy)  
1920. *Terebratulina retusa* (LINNAEUS), Dall, p. 294.  
1920. *Terebratulina retusa emarginata* RISSO, Dall, p. 294.  
1927. *Terebratulina retusa* (LINNAEUS), Thomson, p. 186.  
1967. *Anomia retusa* LINNAEUS, Brunton & Cocks (in Brunton *et al.*), p. 175 (with synonymy)  
1979. *Terebratulina retusa* (LINNAEUS), Brunton & Curry, p. 38.  
1979. *Terebratulina retusa* (LINNAEUS), Logan, p. 37 (with synonymy)  
1994. *Terebratulina retusa* (LINNAEUS), Anadón, p. 68 (with synonymy)  
2005. *Terebratulina retusa* (LINNAEUS), Álvarez & Emig, p. 139, 220 (with synonymy)  
2006. *Terebratulina retusa* (LINNAEUS), Lee, Smirnova & Sun, p. 2147.  
2012. *Terebratulina retusa* (LINNAEUS), Emig, p. 20 (with synonymy)  
2015. *Terebratulina retusa* (LINNAEUS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 5.

**Material.** A ventral valve fixed to a card introduced into a glass-tube glued to a card-board with an old label with the name '*Terebratulina caput-serpentis* Lin. 'written on it and 'Manche' as 'Localité' (Planche 12E-H). In the reverse of the card-board, a label with the registered number ML-ZOO-MAL-00016 is fixed.

Besides the lot above, there are other seven in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- Ten articulated specimens (Planches 12I-DD, 13A-II) loose in a glass-tube (Planche 12I). In the interior of the glass-tube there is also a light green card. In the reverse of the card nothing is written. The glass-tube and the card –board to which probably was originally glued, are now enclosed in a plastic bag with registered number ML-ZOO-MAL-00012 stick to it. The card-board has an old label attached to it with the name '*Terebratulina caput-serpentis* Lin' and 'Roscoff' as 'Localite', written by hand (Planche 12I). The smallest specimen of this lot (Planche 12J-K) resembles more a small *Joania cordata* than a *Terebratulina retusa* (see '**Remarks**' below).

- An articulated specimen (Planche 14A-G) fixed to a light blue card introduced into a glass-tube (Planche 14A-B). In the reverse of the card nothing is written. The glass-tube and the card-board to which probably was originally glued, are now enclosed in a plastic bag. The card-board has an old label attached to it with the words '*Talisman* Travail.' written by hand (Planche 14A). A label with the registered number ML-ZOO-MAL-00050 is fixed in the reverse of the card-board.

- Five articulated specimens (Planche 14H-L) fixed to a light green card (Planche 14H) introduced into a glass-tube. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00081 stick to it. In this lot, the ribs of the two biggest specimens are finer and more numerous (Planche 14K-L) than those of the smaller specimens and the pustules present in the three small specimens seems to be absent in the bigger specimens of this lot (compare Planche 14 I-J and K-L). So, although this lot is here assigned to *Terebratulina retusa* (LINNAEUS, 1758) the two bigger specimens somehow resemble the external morphology of *Terebratulina septentrionalis* (COUTHOUY, 1838).

- Two articulated specimens (Planche 14M-V) fixed to a light green card (Planche 14M) introduced into a glass-tube. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00100 stick to it.

- A ventral valve and a dorsal, probably the counterpart of the preceding, fixed to a card introduced into a glass-tube (Planche 14AA). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00103 stick to it.

- An articulated specimen, a ventral valve and a dorsal, probably the counterparts of the preceding, fixed to a glass-slide with a card of bright black colour below and introduced into a glass-tube (Planche 14W). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00132 stick to it.

- Four articulated specimens fixed to a light brown card (Planche 15A) introduced into a glass-tube. In the reverse of the card nothing is written. The glass-tube that has been detached from

the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01292 stick to it.

**Description.** Shell small to large. The shell outline is longitudinally ovate to subpentagonal, longer than wide, slightly auriculate, especially in juvenile stages, at hinge line (Planches 12L-M, P, W; 13O, Q, U, W-Y, DD, FF; 14C-D, FF). Anterior commissure rectimarginate to slightly uniplicate (Planches 12S, Y; 13B-D, I, N, S-T, BB-CC, GG, II; 14G, S-T, U). The colour varies from white to yellowish-grey. The ventral valve shows a suberect beak with a circular and relatively large foramen, mesothyrid to permesothyrid, deltidial plates small and disjunct (Planches 12E-G, P-R, W, BB; 13E, J, M, U; 14C-D, X), well developed pedicle collar (Planches 12E-G, P-R, BB; 13E, J, U; 14C-D, X) and hooked teeth without dental plates or swollen bases (Planches 12E-G; 14DD-EE). Pedicle variable in length commonly splitting into fine rootlets of variable length at the distal end (Planches 13W-AA, DD-FF, HH; 14O-R, V). Externally the valves have numerous rather coarse radial ribs and few growth lines (e.g., Planches 12AA-CC; 13A-N, BB-CC; 14C, K-L, 15B-C). The ribs become nodose forming smooth rounded tubercles in juveniles (e.g., Planches 12M-P; 14C, N, BB-CC), with maturity they increase in number by bifurcation or intercalation (e.g., Planches 14K-L; 15C). Ventral umbo with more or less developed posterolateral pustules (e.g., Planches 12W-X; 13L; 14E-F, Z). In the specimen of the lot ML-ZOO-MAL-00016 the dorsal valve is completely lost, but the dorsal ends of some muscles, remains of the internal epithelia and complete and dried plectolophous lophophore, could be seen seemingly in place (Planche 12E-F). The shell, as in other terebratulides, is endopunctate (e.g., Planches 13U-V). Spicules are present in the internal soft tissues (e.g., Planche 12E-F). Median septum is absent in both valves. Dorsal valve internally with socket ridges and crural bases fused, forming prominent ridge and relatively long (compared with the whole loop) and converging crura supporting a short ring like loop, with transverse band ventrally arched (e.g., Planches 14Z, FF-II.). Cardinal process small, transverse (e.g., Planches 14Z, FF-II.). Muscular impressions weak. Lophophore plectolophous with long side arms and short spiral arms (Planches 12E-F, U-V, Z; 13C-D, T, GG-II; 14F-G, S-V).

**Remarks.** The name '*caputserpentis*' as appearing in Linnaeus (1767: *Anomia caputserpentis*) is a junior synonym of '*retusa*' Linnaeus (1767: *Anomia retusa*) (see Brunton & Cocks, in Brunton *et al.*, 1967, p. 174-176; Brunton & Cocks, 1967, p. 294-295; see also Thomson, 1927, p. 186, and discussion in Álvarez & Emig, 2005, p. 139 and Emig, 2012, p. 21).

The specimen of the lot ML-ZOO-MAL-00016, from 'Manche', illustrated in Planche 12E-G, resembles that of Fischer & Cehlert (1891, pl. 2, fig. 4t). No station, 'dragage' numbers or 'profondeur' appear in the available labels (Planche 12H; see also Fischer & Cehlert 1890a, p. 120; 1891, p. 33).

The articulated specimens of the lot ML-ZOO-MAL-00081, illustrated in Planche 14H resemble those of Fischer & Cehlert (1891, pl. 2, figs 4g-i, k-o), namely that of Planche 14I would correspond with Fischer & Cehlert pl. 2 fig 4h, and that of Planche 14K with Fischer & Cehlert pl. 2 fig. 4m. The dorsal valve of the lot ML-ZOO-MAL-00132, illustrated in Planche 14W, Z resemble that of Fischer & Cehlert (1892a, pl. 1, fig 2e). No information is included with the glass-tubes containing these two last lots.

Of the ten articulated specimens of the lot ML-ZOO-MAL-00012, the smallest shell, that tightly attached by the pedicle to a bryozoan colony (Planche 12J-K), resembles more the shell of a small *Joania cordata* than that of a *Terebratulina* (see '**Remarks**' for *Joania cordata*).

Among the 73 card-boards from which the glass-tubes have been detached there are three with an old label with the name '*Terebratulina caput serpentis* Linné sp.' written on it and 'Manche', 'La Manche' and 'Golfe de Gascogne' as 'Localities' (Planche 17A-C) without any label with registered number fixed in the reverse of it. Of the stations listed by Fischer & Cœhlert (1891, p. 33) none of them was done in 'Localité La Manche' and only one in the 'Golfe de Gascogne', this is the station 1 of *Le Travailleur* [1880, 'dragage' 22, 31 juillet, profondeur 435 m]. 'Golfe de Gascogne' is also the locality for the stations a, b and c done with '*Hirondelle*' the second, third and ninth (respectively) of August 1886, and listed by Fischer & Cœhlert, 1890a, p. 120 (see also, Fischer & Cœhlert, 1892a, p. 9 and 24). '*Terebratulina caput-serpentis* Linné sp.' is described here as *Terebratulina retusa* (LINNAEUS, 1758).

***Terebratulina septentrionalis* (COUTHOUY, 1838)**  
**(Planches 15D-GG, 16A-MM, 17D)**

1838. *Terebratula septentrionalis* COUTHOUY, p. 65.
1880. *Terebratulina caput-serpentis* (LINNAEUS) var. *septentrionalis* (COUTHOUY), Davidson, p. 33. (with synonymy)
1887. *Terebratulina septentrionalis*, COUTHOUY, Cœhlert, p. 1237, 1241, figs 992, 998.
- 1890a. *Terebratulina septentrionalis* (COUTHOUY), Fischer & Cœhlert, p. 120.
1891. *Terebratulina septentrionalis* (COUTHOUY), Fischer & Cœhlert, p. 36.
- 1892a. *Terebratulina septentrionalis* (COUTHOUY), Fischer & Cœhlert, p. 9. (with synonymy)
1920. *Terebratulina septentrionalis* (COUTHOUY), Dall, p. 297. (with synonymy)
1979. *Terebratulina septentrionalis* (COUTHOUY), Brunton & Curry, p. 40.
2015. *Terebratulina septentrionalis* (COUTHOUY), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 5.

**Material.** A dorsal valve and a ventral, probably belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 15H-K). In the reverse of the card it appears written by hand 'Dr 160 Baie Elisa' (Planche 15I). In a second glass-tube there are an articulated specimen, a disarticulated dorsal valve and a ventral valve fixed to a card (Planche 15L). In the reverse of the card it appears written by hand '*Hirondelle* 3 Août 1887, N°77 *Terebratulina septentrionalis* Couthouy' (Planche 15N). Finally, in a third glass-tube there are two disarticulated specimens fixed to a card (Planche 15O). In the reverse of the card it appears written by hand 'Exp. de l'*Hirondelle* 1889 *Terebratulina septentrionalis* Couthouy. 3 Août, N°77' (Planche 15P). These three glass-tubes are glued to a card-board with an old label with the name '*Terebratulina septentrionalis* Couthouy, Localité Parages du banc de Terre-Neuve' written on it (Planche 15H). A label with the registered number ML-ZOO-MAL-00044 is fixed in the reverse of the card-board.

An articulated specimen, a ventral valve and a dorsal fixed to a card (Planche 15V) introduced into a glass-tube glued to a card-board with an old label from the 'MUSEUM DE LAVAL', with the name '*Terebratulina caputserpentis* Var *septentrionalis*' written on it (Planche 15U). A label with the registered number ML-ZOO-MAL-00049 is fixed in the reverse of the card-board.

Two articulated specimens fixed to a card (Planche 16B) introduced into a glass-tube. In the reverse of the card it appears written by hand 'Exped. de l'*Hirondelle* 3 Août 1889, *Terebratulina septentrionalis* Couthouy Dr. N°77.' (Planche 16C). In a second glass-tube there are a dorsal valve and a ventral valve, probably the counterparts of the preceding, fixed to a card (Planche 16T). In the reverse of the card it appears written by hand '*Hirondelle* 3 Août 1887, N°77 *Terebratulina septentrionalis* Couthouy' (Planche 16U). The two glass-tubes are glued to a card-board with an old label with the name '*Terebratulina septentrionalis* Couthouy, Localité Parages de Terre-Neuve' written on it (Planche 16A). A label with the registered number ML-ZOO-MAL-00043 is fixed in the reverse of the card-board.

A ventral valve and a dorsal valve, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 16X). In the reverse of the card it appears written by hand '*Hirondelle* 3 Aout 1887, N°77, *Terebratulina septentrionalis* Couthouy' (Planche 16Y). The glass-tube is glued to a card-board with an old label attached to it with the words '*Terebratulina septentrionalis* Couth.' and 'Terre Neuve' as 'Localité', written by hand (Planche 16X). A label with the registered number ML-ZOO-MAL-00045 is fixed in the reverse of the card-board.

Besides the lots described above, there are other two in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- One articulated specimen and a ventral valve fixed to a light blue card introduced into a glass-tube. In the reverse of the card nothing is written. A loose ventral valve and two dorsal are also inside the tube (Planche 15D). The glass-tube, that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00118 stick to it. The ribs of these specimens are finer and more numerous than those present in typical specimens of *Terebratulina retusa*, and pustules seems to be absent ( Planche 15D-G) and the external morphology of the articulated specimen somehow resembles that of *Terebratulina septentrionalis* (COUTHOUY, 1838). So, this lot could be assigned, although doubtfully, to *T. septentrionalis* (COUTHOUY, 1838).

- A ventral valve and a dorsal, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 16GG). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00120 stick to it. The ribs of this specimen are finer and more numerous than those present in typical specimens of *Terebratulina retusa*, and pustules seems to be absent (Planche 16MM) so, this lot could be assigned, although doubtfully, to *Terebratulina septentrionalis* (COUTHOUY, 1838).

**Description.** The shells are of medium to big size, thin, and white to light grey in colour. The outline is longitudinally ovate to slightly subpentagonal, biconvex to ventribiconvex in lateral profile (e.g., Planches 15W-Z; 16D, G, K-P), with the anterior commissure rectimarginate to faintly uniplicate (Planches 15BB-CC; 16F, N, HH). Externally the valves are costellate with few and scarcely marked growth-lines (e.g., Planche 16J). Ventral umbo suberect, pedicle foramen permesothyrid, small to large, deltidium laterally restricted by narrow, disjunct, deltidial plates (Planches 15S-T, W, AA, DD-EE; 16E, H-I, O, Q, V). Internally with pedicle collar, hinge teeth cyrtomatodont, dental plates absent (Planches 15S-T, DD-EE; 16H-I, V). Dorsal interior with small cardinal process, inner socket ridges and crural bases fused, forming prominent ridge, median septum and hinge plates absent, crura converging anteriomedially, crural processes well developed but commonly disjunct not forming the short ring-like loop characteristic of the genus (Planches 15M, R, Q, FF-GG; 16W). The shell, as in other terebratulides, is endopunctate. Impressions of the mantle canal system were found in the interior of some dorsal valves branching in an arborescent fashion (e.g., Planche 15E).

**Remarks.** The disarticulated specimen of the first tube (Planche 15J-K), that was fixed to a card in the reverse of which it appears written by hand 'Dr 160 Baie Elisa' (Planche 15I) is not a *Terebratulina septentrionalis* (COUTHOUY, 1838) as it is written in the label (Planche 15H) but a Terebratellidae and is discussed below as *Magellania venosa* (SOLANDER, 1789). Besides, it should be noted that dredging 160 is not listed by Fischer & Cœhlert (1890a, 1891, 1892a) of *Le Travailleur – Le Talisman* (1880-1883) or *Hirondelle* (1886, 1887, 1888) expeditions. However, it is listed by these authors on p. 318 of their monograph describing the brachiopods recovered during the 'Mission scientifique du Cap Horn (1882-1883)' (Fischer & Cœhlert, 1892b).

*Terebratulina septentrionalis* is very similar externally and internally to *Terebratulina retusa* (LINNAEUS, 1758) from which seems to differ mainly in the kind of ribbing, coarse in *T. retusa* and finer in *T. septentrionalis* (see discussion in Fischer & Cœhlert, 1892a, p. 9-16; Brunton & Curry, 1979, p. 40-41; Logan 1979, p. 38; Cooper 1981b, p. 11; Cohen *et al.*, 1991; Endo *et al.*, 1994; Álvarez & Emig, 2005, p. 139-140).

The specimens of the lots ML-ZOO-MAL-00043 and ML-ZOO-MAL-00044 here described and illustrated (Planches 15L-T; 16A-W) come from the dredging number 77 of the expedition of the *Hirondelle*, done the third of August 1887 according to some of the labels (Planches 15N, 16U), or 1889 as written in others (Planches 15P; 16C). Fischer & Cœhlert in their monographs did not cited or listed any dredging done in 1889, so the year 1889 that is written in two of the cards seems to be a 'lapsus calamy'. In addition, dredging 77, as it happens with dredging 160 (see above), does not appear among those listed by Fischer & Cœhlert (1890a, 1891, 1892a) and done with the *Le Travailleur- Le Talisman* (1880-1883) or the *Hirondelle* (1886, 1887, 1888) respectively. Fischer & Cœhlert (1892a, p. 24) listed 14 stations on which different species of brachiopods were recovered with the *Hirondelle* from the second of August 1886 till the 22nd of August 1888. For the eighth station listed (number 162), that yielded *Terebratulina septentrionalis* Couthouy, they provide as date the third of August 1887, 'latitude 46°50'6"N longitude 50°11'45"W' and a depth of 155 m, but in this table or through the text no dredging numbers are provided. The locality of stations 161 and 162 was the 'parages du Banc de Terre-Neuve' (see Fischer & Cœhlert 1892a, p. 10), the same locality written in the old labels accompanying the lots ML-ZOO-MAL-00043 and ML-ZOO-MAL-00044 (Planches 15H, 16A).

The disarticulated valves of the lot ML-ZOO-MAL-00044, illustrated in Planche 15O (see also 15Q-T) resemble those of Fischer & C̈ehlert (1892a, pl. 1 figs 1r-s). The disarticulated valves of the lot ML-ZOO-MAL-00043, illustrated in Planche 16T (see also 16V-W) resemble those of Fischer & C̈ehlert (1892a, pl. 1 figs 1e-f). The valves of these two last lots are fixed to two cards in the reverse of them it is written by hand '*Hirondelle* 3 Août 1887, N°77 *Terebratulina septentrionalis* Couthouy' (see Planches 15P and 16U respectively). Fischer & C̈ehlert (1890a) listed a station with *Terebratulina septentrionalis* done the second of August 1887 in the 'Parages du Banc de Terre-Neuve', none appears as done the third of August 1887 (see also Fischer & C̈ehlert, 1892a, p. 10, 24).

The dorsal valve of the lot ML-ZOO-MAL-00118, illustrated in Planche 15D-E, resembles that of Fischer & C̈ehlert (1891, pl. 2 fig. 4s). No information is included with the glass-tube containing this lot.

Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Terebratulina septentrionalis* Couth.' written on it and 'Terre-Neuve' as 'Localité' (Planche 17D) without any label with registered number fixed in the reverse of it.

**Family Chlidonophoridae MUIR-WOOD, 1959**

**Subfamily Eucalathinae MUIR-WOOD, 1965**

**Genus *Eucalathis* FISCHER & C̈EHLERT, 1890**

**Type species:** *Terebratulina ? murrayi* DAVIDSON, 1878, p. 437, by original designation.

***Eucalathis tuberata* (JEFFREYS, 1878)  
(Planches 17E-MM, 18FF-HH)**

- 1878. *Terebratula tuberata* JEFFREYS, p. 401.
- 1880. *Terebratulina tuberata* (JEFFREYS), Davidson, p. 13.
- 1886. *Terebratulina tuberata* (JEFFREYS), Davidson, p. 39.
- 1891. *Eucalathis tuberata* (JEFFREYS), Fischer & C̈ehlert, p. 43.
- 1920. *Eucalathis tuberata* (JEFFREYS), Dall, p. 323.
- 1979. *Eucalathis tuberata* (JEFFREYS), Brunton & Curry, p. 42.
- 2004. *Eucalathis tuberata* (JEFFREYS), Logan, Bianchi, Morri & Zibrowius, p. 167
- 2005. *Eucalathis tuberata* (JEFFREYS), Álvarez & Emig, p. 143, 221 (with synonymy)
- 2006. *Eucalathis tuberata* (JEFFREYS), Zezina, p. 69.
- 2015. *Eucalathis tuberata* (JEFFREYS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 6.

**Material.** Five articulated specimens, two ventral valves and three dorsal fixed to a light blue card introduced into a glass-tube (Planche 17E-DD). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00108 stick to it.

Three articulated specimens, a ventral valve and a dorsal probably belonging to the same disarticulated specimen, fixed to a light brown card introduced into a glass-tube (Planche 17EE-MM). In the reverse of the card nothing is written, but in the tube there is also a piece of paper with the words '*Eucalathis tuberata* Jeffreys sp Nord de l'Espagne; Prof 1226 à 2018.' written by hand (Planche 17FF). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01282 stick to it.

**Description.** Shell minute, subtrigonal to subpentagonal in outline with rounded anterior, auriculate, slightly longer than wide, hinge straight, ventribiconvex, anterior commissure rectimarginate or incipiently uniplicate, hinge straight, greyish or yellowish-white in colour (Planche 17F-G, I-L, R, U, AA-BB, GG-MM). The ventral umbo is pointed, short, slightly incurved, obliquely truncated, the pedicle foramen is oval in shape and the deltidial plates are small and do not join medianly (Planche 17F-G, I-M, R, AA-BB, GG-HH, KK-LL). The external surfaces have numerous ribs, which are commonly tuberculate, especially on the ventral valve, with rare intercalations, growth lines numerous (Planche 17F, K-L, M, T-S, U-V, GG-HH, KK-MM). Pedicle collar present (Planche 17F, L, M, AA-BB, GG-HH, JJ-LL), dental plates absent (Planche 17M, AA-BB, JJ) inner hinge plates absent, socket ridges strong, elevated, uniting with cardinal process, and anteriorly with the crural bases (Planche 17N-Q, Z, CC-DD, II). Loop short, chlidonophorid but transverse band dorsally directed, crural processes disjunct, not forming a ringlike loop or tube (Planche 17N-Q, W, Z, CC-DD, II). Lophophore spirolophous with 2 single whorl spirals set at angle to plane of symmetry, filaments long (Planche 17W-Y). The shell, as in other terebratulides, is endopunctate (e.g., Planche 17H, N, P, R-T).

**Remarks.** The articulated specimen illustrated in Planche 17U-V resembles that illustrated by Fischer & Cœhlert (1891, pl. 2, fig. 5a-d) and the dorsal valve with dried lophophore illustrated in Planche 17W-Y resembles that of Fischer & Cœhlert (1891, pl. 2 fig. 5f). No information is included with the glass-tube containing this lot (ML-ZOO-MAL-00108) and nothing is written in the reverse of the card to which these two specimens are fixed.

Among the card-boards from which the glass-tubes have been detached there are two with old labels with the name '*Eucalathis tuberata* Jeffreys' written on it and 'Nord de l'Espagne' 'Prof. 1226 à 2018' (Planche 18FF-GG) and 'En face le Cap Gros Mediterranean' 'Prof. 86 m.' (Planche 18HH) as 'Localities' without any label with registered number fixed in the reverse of it. The first one (Planche 18FF-GG) corresponds with the station two [*Le Travailleur*, 1881, 'Dragage' 39, 15 août] listed by Fischer & Cœhlert (1891, p. 45).



***Eucalathis ergastica* FISCHER & CÆHLERT, 1890  
(Planche 18A-EE, II)**

- 1890b. *Eucalathis ergastica* FISCHER & CÆHLERT, p 73.  
1891. *Eucalathis ergastica* FISCHER & CÆHLERT, Fischer & Cæhlert, p 48.  
1920. *Eucalathis ergastica* FISCHER & CÆHLERT, Dall, p. 324.  
1965a. *Eucalathis ergastica* FISCHER & CÆHLERT, Muir-Wood, H812, fig. 688 2f-j.  
1994. *Eucalathis ergastica* FISCHER & CÆHLERT, Anadón, p. 69.  
2005. *Eucalathis ergastica* FISCHER & CÆHLERT, Álvarez & Emig, p. 143, 221.  
2006. *Eucalathis ergastica* FISCHER & CÆHLERT, Lee, Smirnova & Sun, fig. 1433 2f-j.  
2006. *Eucalathis ergastica* FISCHER & CÆHLERT, Zezina, p. 69.  
2015. *Eucalathis ergastica* FISCHER & CÆHLERT, Emig, Álvarez & Bitner, WoRMS Taxon List, p. 6.

**Material.** One articulated specimen, and three ventral valves and one dorsal fixed to a card of light blue colour, introduced into a glass-tube together with two loose articulated specimens and a disarticulated dorsal valve (Planche 18A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00135 stick to it.

**Description.** Similar to *Eucalathis tuberata* (JEFFREYS, 1878), but of slightly bigger size (3 mm length in adult *E. tuberata*; 7 mm in adult *E. ergastica*), with fewer and less clearly tuberculate ribs (30-32 in adult *E. tuberata*; 18-20 in adult *E. ergastica*), ventral beak less prominent (e.g., Planche 18L-N, S-V, CC). Internally, the crura are wider and shorter than those of *E. tuberata* that are thin, long, becoming slightly convergent anteriorly. The crural processes are much better developed and ventromedially directed in *E. ergastica* than in *E. tuberata*. The descending branches of the loop are longer in *E. ergastica* than in *E. tuberata* (compare Planche 17N-Q with Planche 18G-K). The two single whorls spirals of its spirolophous lophophore are almost vertical in *E. tuberata* but are oblique in reference to the dorsal valve interior in *E. ergastica*, being the median filaments longer in *E. ergastica* (Planche 18X-BB). The shell, as in other terebratulides, is endopunctate (Planche 18C, H, O, U, DD).

**Remarks.** Of the specimens of the lot ML-ZOO-MAL-00135, the dorsal valve illustrated in Planche 18G-K resembles that of Fischer & Cæhlert (1891, pl. 3 fig 6f), the dorsal valve with lophophore illustrated in Planche 18X-BB resembles that of Fischer & Cæhlert (1891, pl. 3 fig 6g) and the articulated specimens illustrated in Planche 18S-U and 18CC resemble that illustrated by Fischer & Cæhlert (1891, pl. 3, fig. 6a-d).

Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Eucalathis ergastica* Fisch. et Cæhl.' written on it and 'Cap Spartel' 'Prof. 717 m.' as 'Localité' (Planche 18II) without any label with registered number fixed in the reverse of it. These data correspond with the station four [*Le Talisman*, 1883, 'Dragage' 10, '10 juin'] listed by Fischer & Cæhlert (1891, p. 49).

Suborder Terebratellidina MUIR-WOOD, 1955

**Superfamily Zeillerioidea ALLAN, 1940**

**Family Zeilleriidae ALLAN, 1940**

**Subfamily Macandreviinae COOPER, 1973**

**Genus *Macandrevia* KING, 1859**

**Type species:** *Terebratula cranium* MÜLLER, 1776, by original designation.

***Macandrevia cranium* (MÜLLER, 1776)  
(Planches 19A-Z, 20A-JJ, 21A-X)**

1776. *Terebratula cranium* MÜLLER, p. 249.  
1791. *Anomia cranium* (MÜLLER), Gmelin, p. 3347.  
1858. *Waldheimia cranium* (MÜLLER), Hancock, pl. 53.  
1859. *Macandrevia cranium* (MÜLLER), King, p. 261.  
1887. *Macandrevia cranium* (MÜLLER), Ehlert, p. 1223, 1241-1243, figs 974A-B, 999, 1000, 1003.  
1891. *Magellania (Macandrewia) [sic] cranium* (MÜLLER), Fischer & Ehlert, p. 72 (with synonymy)  
1920. *Macandrevia cranium* (MÜLLER), Dall, p. 354 (with synonymy)  
1927. *Macandrevia cranium* (MÜLLER), Thomson, p. 236.  
1959c. *Macandrevia cranium* (MÜLLER), Atkins, p. 335.  
1979. *Macandrevia cranium* (MÜLLER), Brunton & Curry, p. 58 (with synonymy)  
1994. *Macandrevia cranium* (MÜLLER), Anadón, p. 72.  
2003. *Macandrevia cranium* (MÜLLER), Gaspard, p. 299 (with synonymy)  
2004. *Macandrevia cranium* (MÜLLER), Logan, Bianchi, Morri & Zibrowius, p. 167.  
2005. *Macandrevia cranium* (MÜLLER), Álvarez & Emig, p. 175, 224 (with synonymy)  
2006. *Macandrevia cranium* (MÜLLER), Zezina, p. 71.  
2015. *Macandrevia cranium* (MÜLLER), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 14.

**Material.** A glass-tube with three articulated specimens fixed by the ventral valve to a card (Planche 19B). In this case, nothing is written in the reverse of the card. The glass-tube is glued to a card-board with an old label with the name '*Macandrewia [sic] cranium* Müller; Localité Cap Bojador' written on it (Planche 19A). A label with the registered number ML-ZOO-MAL-00002 is fixed in the reverse of the card-board.

In a second glass-tube there are two disarticulated and eroded dorsal valves fixed to a card (Planche 19Q). In the reverse of the card it is written: '*Macand. cranium. Côtes d'Espagne*' (Planche 19P). The glass-tube is glued to a card-board with an old label with the name '*Macandrewia cranium* Müller; Localité Côtes d'Espagne. Prof. 392-1960' written on it (Planche 19O). A label with the registered number ML-ZOO-MAL-00014 is fixed in the reverse of the

card-board.

In a third glass-tube there is a disarticulated specimen fixed to a card (Planche 19X). In the reverse of the card it appears written by hand '*Travailleur*, 6 Juillet. N° 3. Prof. Côte d'Espagne' (Planche 19W). The glass-tube is glued to a card-board with an old label with the name '*Macandrewia [sic] cranium* Müll. sp; Localité Golfe de Gascogne; Prof. 512' (Planche 19V). A label with the registered number ML-ZOO-MAL-00011 is fixed in the reverse of the card-board.

Besides the lots described above, there are other seven in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- A ventral valve and a dorsal, partly broken, fixed to a light blue card introduced into a glass-tube (Planche 20A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00093 stick to it.

- A dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube, plus an articulated specimen and another disarticulated dorsal valve and a ventral, probably belonging to the same specimen, loose with part of a loop, in the glass-tube (Planche 20I). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00099 stick to it.

- An articulated specimen fixed to a light blue card and another articulated specimen loose in a glass-tube (Planche 20P). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00106 stick to it.

- Two articulated specimens fixed to a light blue card introduced together with the loose valve of an 'arcoïd' bivalve in a glass-tube (Planche 20Z). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00109 stick to it.

- A dorsal valve fixed to a light blue card and a ventral, probably belonging to the same specimen, loose in a glass-tube (Planche 21A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00110 stick to it.

- A ventral valve fixed to a light brown card and two dorsal valves and a ventral loose inside a glass-tube (Planche 21K-L). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of paper in which it is written by hand '*Macandrewia [sic] cranium* Müller sp, Norvège' (Planche 21W). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01278 stick to it.

- An articulated specimen fixed to a light brown card introduced into a glass-tube (Planche 21G). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of

paper in which it is written by hand '*Macandrewia [sic] cranium* Müller sp, Golfe de Gascogne' (Planche 21J). The glass-tube and the card-board from which it has been detached are now enclosed in a plastic bag with registered number ML-MAL-01289 stick to it. In the card-board there is an old label with nothing written on it.

**Description.** Shells of medium size, white yellowish to light grey in colour, smooth save for few growth lines (Planches 19B-N; 20J-N, P-Y, AA-HH; 21H-I, L). The outline is longitudinally ovate to subpentagonal, slightly truncated anteriorly, the lateral profile biconvex to ventribiconvex, with the anterior commissure rectimarginate or weakly unisulcate (Planches 19B-I, K-N; 20J-N, P-Y, AA-HH; 21H-I, L). Ventral umbo short, broad, suberect to erect, with beak ridges ill defined; pedicle foramen medium size, round, permesothyrid, attrite, deltidial plates disjunct (Planches 19B-G, K-N, Y; 20F-H, J, L, N, Q, S-U, Y, AA-BB, DD-EE, GG-II; 21S-T). Ventral interior with teeth moderate, dental plates short, slender, pedicle collar well developed, sessile (Planches 19Y; 20F-H, JJ, HH-II; 21D-E, U, S-T). Dorsal interior lacking cardinal process, the crural bases fuse with inner socket ridges, median septum absent, inner hinge plates steeply inclined to floor of valve forming a sessile septalium, crural processes short, pointed, the loop is long (Planches 19I-J, X, Z; 20B-E, O; 21B, F, M, R, O-Q). The shell, as in other terebratulides, is endopunctate, with minute and rather widely separated endopunctae.

**Remarks.** The dorsal valve illustrated in Planche 19X, Z, resembles that illustrated by Fischer & Cœhlert (1891, pl. 5, fig. 10l). This valve comes from station 7, dredging number three, expedition *Travailleur*, done the sixth of July 1882 (Planche 19W; see also Fischer & Cœhlert, 1891, p. 74). Cap Bojador, named nowadays 'cap Boujdour', is located in the Western Sahara.

In addition, the disarticulated dorsal valve of the lot ML-ZOO-MAL-00093, illustrated in Planche 20A-E, resemble that figured by Fischer & Cœhlert (1891, pl. 5, fig. 10m, see also text in p. 138: 'Crochet de la valve dorsale montrant les insertions des muscles adducteurs *ad*, et des pédonculaires dorsaux *pd*' ). The accompanying ventral valve (Planche 20A, F-H) is rather similar to that illustrated by Fischer & Cœhlert (1891, pl.5, fig. 10g; see also text in Fischer & Cœhlert, 1891, p. 137: 'intérieur d'une valve ventrale montrant les empreintes des muscles et les glandes génitales'). These two valves are fixed to a light blue card, in the reverse of which nothing is written and introduced inside a glass-tube that has been detached from the card-board to which was originally glued. Moreover, inside the tube there is not a piece of paper with information as it happens with other lots, so there is no information about the locality and/or depth, or possible old name of this specimen. The articulated specimen of bigger size in lot ML-ZOO-MAL-00106 (Planche 20P-T) resembles the specimen illustrated by Fischer & Cœhlert (1891, pl. 5, fig. 10a-d). Finally, the specimen illustrated by Fischer & Cœhlert (1891, pl. 5, fig. 10e) is rather similar to the small one of the lot ML-ZOO-MAL-00106 (Planche 20P, U). No information is included with the glass-tubes containing these two last lots.

In the glass-tube containing the articulated specimen of the lot ML-MAL-01289 there is a folded piece of paper in which it is written by hand '*Macandrewia [sic] cranium* Muller sp, Golfe de Gascogne' (Planche 21J). This locality is listed in Fischer & Cœhlert (1891, p. 74), stations 5, 6 and 7, dredgings 1, 2 and 3, depths 564, 608 and 512 respectively done during the 6th of July 1882 with the *Travailleur*.

Among the 73 card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Macandrewia [sic] cranium* Müller' written on it and 'Cap Bojador' (Prof. 782m) as 'Localité' (Planche 21X) without any label with registered number fixed in the reverse of it. These data correspond with those of the station 10, *Le Talisman* 1883, dredging 65 (8 juillet) listed by Fischer & Ehlert (1891, p. 74). It should be remembered as stated above, that Cap Bojador, named nowadays 'cap Boujdour', is located in the Western Sahara.

**Superfamily Kingenoidea ELLIOTT, 1948**

**Family Aulacothyropsidae DAGYS, 1972**

**Subfamily Babukellinae MACKINNON, SMIRNOVA & LEE, 2006**

**Genus *Fallax* ATKINS, 1960**

**Type species:** *Fallax dalliniformis* ATKINS, 1960, by original designation.

***Fallax dalliniformis* ATKINS, 1960  
(Planches 22A-U, 23A-GG, 24A-BB)**

1878. *Terebratula septata* PHILIPPI, Jeffreys, p. 407 (pars)  
1890a. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 120 (parts)  
1891. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 64 (parts)  
1892a. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 19 (parts)  
1927. *Dallina septigera* (LOVÉN), Thomson, p. 235, 252 (pars)  
1960a. *Fallax dalliniformis* ATKINS, p. 72.  
1979. *Fallax dalliniformis* ATKINS, Brunton & Curry, p. 56.  
1981b. *Fallax dalliniformis* ATKINS, Cooper, p. 22 (with synonymy)  
1994. *Fallax dalliniformis* ATKINS, Anadón, p. 74.  
2005. *Fallax dalliniformis* ATKINS, Álvarez & Emig, p. 173, 224 (with synonymy)  
2006. *Fallax dalliniformis* ATKINS, MacKinnon, Smirnova & Lee, p. 2199.  
2015. *Fallax dalliniformis* ATKINS, Emig, Álvarez & Bitner, WoRMS Taxon List, p. 9.

**Material.** A glass-tube with a small and disarticulated specimen fixed to a card (Planche 22B). The glass-tube is glued to a card-board with an old label with the name '*Dallina septigera* Lovén; Localité Cap. Bojador; Prof 640' written on it (Planche 22A). A label with the registered number ML-ZOO-MAL-00006 is fixed in the reverse of the card-board.

In a second glass-tube there is a disarticulated specimen fixed to a card (Planche 22H). In the reverse of the card it is written by hand: '*Talisman*. 8-9 Juillet; Drag. 62-71, Prof, 640-782. Loc: Sahara - Cap. Bajador' (Planche 22I). The glass-tube is glued to a card-board with an old label with the name '*Dallina septigera* Lovén sp.; Localité Cap. Bojador; Prof 640-782' written on it (Planche 22G). A label with the registered number ML-ZOO-MAL-00008 is fixed in the reverse

of the card-board.

Besides the lots described above, there are other three in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- A dorsal valve and a ventral, probably the counterpart of the preceding (Planche 23A), are loose in a glass-tube with a light blue card. In the reverse of the card it appears written by hand 'Cape Bogador' (*sic*) with black ink (Planche 23B). The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00010 fixed on it.

- A dorsal valve and a ventral, probably the counterpart of the preceding, plus another articulated specimen loose in a glass-tube (Planche 23R). In the reverse of the card it appears written by hand 'Cape Bogador.' (*sic*) with black ink (Planche 23S). The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00017 stick to it.

- Two articulated specimens, one fixed by the dorsal valve to a light blue card and the other loose in a glass-tube (Planche 24H). In the reverse of the card nothing is written. The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00116 stick to it.

**Description.** Shell of medium size, biconvex, smooth, equidimensional, subcircular to slightly subpentagonal, anterior commissure rectimarginate (Planches 22C-D, J-K; 23K-Q, T-X; 24A-G, I-K, M-N, Q, R, T-X, Z-BB). Ventral beak low, erect, beak ridges rounded, deltidial plates conjunct; foramen medium size, round, permesothyrid (Planches 22C, J, L-M; 23C-G, K, P-Q,). Dental plates short, slightly inclined ventrally (Planches 22D, O; 23F-G, Y-Z), pedicle collar broad, sessile (Planches 22L; 23D, G). Cardinalia with well-developed septalium, inner and outer hinge plates well developed, crural bases poorly differentiated, cardinal process very small or absent, transversely oval myophore not easily differentiated, median septum extending anteriorly about three-quarters valve length, crura short, subparallel, crural processes short (Planche 22E, P-T; 23H-J, AA-GG), loop diploform, with retention of strong, mediovertical connection to septum (Planche 22E, P-T; 23H-J, AA-GG; 24K-L, W-Y). The shell, as in other terebratulides, is endopunctate.

**Remarks.** Till the revision of *Dallina septigera* (Lovén) by Atkins (1960a, b) what are currently considered two homeomorphic terebratulides, *Fallax dalliniformis* ATKINS, 1960 and *Dallina septigera* (Lovén) were frequently confused, and the specimens described as belonging to only one taxon, *Dallina septigera* (Lovén) (e.g., Fischer & Ehlert, 1890a, 1891, 1892a; Thomson 1927, p. 235, 252). In this paper, Atkins (1960a, b; see also discussion in Brunton & Curry, 1979, p. 55 and Cooper, 1981b, p. 23) is followed when reassigning to *Fallax dalliniformis* ATKINS, 1960, the specimens labelled as *Dallina septigera* (Lovén) [ML-ZOO-MAL-00006, ML-ZOO-MAL-00008] but having the hinge teeth supported by dental plates, broad pedicle collar (e.g., Planche 22D, O), and a loop connected to the median septum (diploform cf. MacKinnon & Lee, 2006a, p. 1974; see also Richardson, 1975a, p. 299 and fig. 3) similar to those of the specimens of '*Dallina septigera*' (*sic*) figured by Fischer & Ehlert (1891, pl. 4, fig 9aa-ab, and pl. 5, fig.

9ac; see also Thomson, 1927, p. 235, fig. 74f-g) (see Planche 22P-T). The specimens of the lots ML-ZOO-MAL-00010, ML-ZOO-MAL-00017 and ML-ZOO-MAL-00116 (Planches 23A-BB; 24A-BB) are also assigned here to *Fallax dalliniformis*. These lots are in glass-tubes detached from the card-boards to which they were originally glued. So, no information about name, locality or depth is available, only in the reverse of the cards to which the specimens of the first two lots were originally fixed it appears written by hand 'Cape Bogador' (*sic*) (Planche 23B and S) (=Cap boujdour, see comment above). Those specimens of the collection lacking dental plates and with loop entirely free from the septum (teloform cf. MacKinnon & Lee, 2006a, p. 1974; see also Richardson, 1975a, p. 299 and fig. 3; Thomson, 1927, p. 235, fig. 74h-k) similar to that of the specimen of *Dallina septigera* figured by Fischer & Cehlert (1891, pl. 4, fig 9x-z) [ML-ZOO-MAL-00003, ML-ZOO-MAL-00004, ML-ZOO-MAL-00005, ML-ZOO-MAL-00007, ML-ZOO-MAL-00068, ML-ZOO-MAL-00072, ML-MAL-01281, ML-MAL-01295 (Planches 46A-R, 47A-R, 48A-AA, 49A-I)] are kept as *Dallina septigera* (Lovén).

The dorsal valve illustrated in Planche 22P-T (lot ML-ZOO-MAL-00008), seems to correspond with that illustrated by Fischer & Cehlert (1891, pl. 4, fig. 9aa-ab). This valve comes from the station 10 (or 11), dredge number 65 (or 66), *Le Talisman* expedition, done the eighth-ninth of July 1883 (Planche 22I; see also Fischer & Cehlert, 1891, p. 67).

The dorsal and ventral valves of the lot ML-ZOO-MAL-00010, once fit together as originally articulated (see Planche 23K-Q), closely resemble the specimen illustrated by Fischer & Cehlert, 1891 (pl. 4, fig. 9r-u) as '*Magellania septigera*'. On the dorsal valve of this specimen there is a 'B' or a '9' (depending of the orientation) written by pencil (see Planche 23K, N-O). If a '9', it coincides with the Planche number given by Fischer & Cehlert (1891) in their pl. 4 (fig. 9r-u).

The outline of the articulated specimen on the right of Planche 23R (see also Planche 24A-G) is rather similar to that of the specimen illustrated by Fischer & Cehlert (1891) pl. 4 fig. 9a-d as '*Magellania septigera*'.

Among the card-boards from which the glass-tubes have been detached there are three with an old label with the name '*Dallina septigera* Lovén' written on it and with 'Cap. Bojador' as 'Localité' and 'Prof. 640-782' (Planche 22U). These data correspond with those of the stations 10 and 11, *Le Talisman* 1883, dredgings 65 and 66 (8 juillet) 'profondeur' 782 and 640 respectively, listed by Fischer & Cehlert (1891, p. 67). No registered numbers were fixed in the reverse of these three card-boards. The specimens related to these cards could currently be considered as *Fallax dalliniformis* ATKINS, 1960 or = *Dallina septigera* (LOVÉN, 1845), the two homeomorphic terebratulides frequently confused (see '**Remarks**' on both species).

**Superfamily Laqueoidea THOMSON, 1927**

**Family Laqueidae THOMSON, 1927**

**Subfamily Laqueinae THOMSON, 1927**

**Genus Laqueus DALL, 1870**

**Type species:** *Terebratula californiana* KÜSTER, 1844, by original designation [= *Laqueus erythraeus* DALL, 1920, p. 350, subsequent designation by MacKinnon & Long, 2000, p. 89; = *L. californicus* DALL, 1870, p. 123)].

***Laqueus rubellus* (SOWERBY, 1846)  
(Planche 25A-J)**

1846. *Terebratula rubella* SOWERBY, p. 94.  
1887. *Laqueus rubellus* (SOWERBY), Davidson, p. 113 (with synonymy)  
1920. *Laqueus rubellus* (SOWERBY), Dall, p. 352 (with synonymy)  
1981. *Laqueus rubellus* (SOWERBY), Zezina, p. 17 (with synonymy)  
1996. *Laqueus rubellus* (SOWERBY), Saito, p. 486.  
2015. *Laqueus rubellus* (SOWERBY), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 10.

**Material.** Two disarticulated dorsal valves and two ventral, one broken into three pieces, probably belonging to the same disarticulated specimens (Planche 25B), are loose in a round white box. In the bottom of the box it is written by hand '*Laqueus rubella* Sow' (Planche 25A). The box is now enclosed in a plastic bag with registered number ML-MAL-01298 stick to it.

**Description.** Shell of medium size, longitudinally ovate, slightly subpentagonal, longer than wide, faintly ventribiconvex (Planche 25C-F, I-J), smooth, with only growth lines, faintly lamellose, yellowish red in colour, more intensely coloured at the lines of growth (Planche 25C-G, I-J); anterior commissure rectimarginate, ventral beak low, suberect, with distinct beak ridges, truncated by a small circular foramen meso to permesothyrid, deltidial plates conjunct (Planche 25H-I). Hinge teeth with ventrally recessive dental plates, pedicle collar sessile (Planche 25H-I). Cardinalia weakly thickened, with inner and outer hinge plates separated by crural bases, inner hinge plates moderately inclined meeting on low median septum to form septalium, inner socket ridges divergent overhanging the sockets; cardinal process weakly differentiated, with very short, transverse myophore (Planche 25F-G), loop long but mainly broken (Planche 25D), muscle impressions weak (Planche 25D, F-G, I). The shell, as in other terebratulides, is endopunctate.

**Remarks.** There is no information about oceanographic vessel, locality, station, dredge or depth accompanying these disarticulated dorsal valves. The only information available is the words '*Laqueus rubella* Sow' written by hand in the bottom of the box containing these valves (Planche 25A). Since Sowerby described this pretty shell in 1846, many much larger and finer examples have been obtained from Japanese waters (Davidson, 1887, p. 114) so, it is highly probable that this is the provenance of the lot ML-MAL-01298.



See also below the heading 'Remarks' when describing the lot ML-MAL-01287 with *Pictothyris picta* (DILLWYN, 1817).

**Family Frenulinidae HATAI, 1938**

**Subfamily Frenulininae HATAI, 1938**

**Genus *Frenulina* DALL, 1895**

**Type species:** *Anomia sanguinolenta* GMELIN, 1791, by original designation.

[After extensive revision, Hopkinson (1907, p. 1035, 1036), in his contribution 'Dates of Publication of the separate parts of Gmelin's Edition (13th) of the 'Systema Naturae' of Linnaeus' concluded that the date of publication for part VI of the 'Tomus I (Regnum Animalum)', containing the pages 30-3910 on Vermes (at that time the brachiopods were related to Vermes) is 1791 (earliest notice: 14. 5. 91) and that is the date accepted in the present revision (see also Spilman, 1967, p. 169, 170; Álvarez & Emig, 2005, p. 147; Álvarez *et al.*, 2005, p. 221; Bitner, 2006a, p. 420; 2008, p. 439)].

***Frenulina sanguinolenta* (GMELIN, 1791)  
(Planches 25K-BB, 26A-O)**

- 1791. *Anomia sanguinolenta* GMELIN, p. 3347.
- 1920. *Frenulina sanguinolenta* (GMELIN), Dall, p. 336 (with synonymy)
- 1927. *Frenulina sanguinolenta* (GMELIN), Thomson, p. 234, 241 (with synonymy)
- 1973a. *Frenulina sanguinolenta* (GMELIN), Cooper, p. 21.
- 1973a. *Frenulina sanguinolenta* (GMELIN), Richardson, p. 111.
- 1973b. *Frenulina sanguinolenta* (GMELIN), Richardson, p. 119.
- 1989. *Frenulina sanguinolenta* (GMELIN), Richardson, Stewart & Liu, p. 213.
- 1996. *Frenulina sanguinolenta* (GMELIN), Saito, p. 492.
- 1997. *Frenulina sanguinolenta* (GMELIN), MacKinnon, D. I., SAITO, M. & ENDO K., p. 228, fig. 4.
- 1997. *Frenulina sanguinolenta* (GMELIN), Laurin, p. 450 (with synonymy)
- 2004. *Frenulina sanguinolenta* (GMELIN), Logan, Bianchi, Morri & Zibrowius, p. 166.
- 2006b. *Frenulina sanguinolenta* (GMELIN), MacKinnon & Lee, p. 2210.
- 2006a. *Frenulina sanguinolenta* (GMELIN), Bitner, p. 420 (with synonymy)
- 2006b. *Frenulina sanguinolenta* (GMELIN), Bitner, p. 28 (with synonymy)
- 2008. *Frenulina sanguinolenta* (GMELIN), Bitner, p. 439.
- 2009. *Frenulina sanguinolenta* (GMELIN), Bitner, p. 16.
- 2009. *Frenulina sanguinolenta* (GMELIN), MacKinnon & Long, p. 315.
- 2010. *Frenulina sanguinolenta* (GMELIN), Bitner, p. 649 (with synonymy)
- 2015. *Frenulina sanguinolenta* (GMELIN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 10.

**Material.** A glass-tube with three disarticulated specimens fixed to a card (Planche 25K). In the reverse of the card nothing is written, but, with the valves there is a small paper fixed also to the card with the name '*Terebratula rubicunda*' and the locality 'Tahiti' written on it (Planche 25K). The glass-tube is glued to a card-board with an old label with the name '*Terebratula rubicunda* Sol.; Localité Détroit de Foveaux, Nouvelle-Zélande' written on it (Planche 25L). A label with the registered number ML-ZOO-MAL-00038 is fixed in the reverse of the card-board.

Another glass-tube with a dorsal valve fixed to a light blue card and a ventral valve probably belonging to the same disarticulated specimen, an articulated specimen and another dorsal valve and a ventral, of small size and probably belonging to the same disarticulated specimen, loose inside the glass-tube (Planche 26A, C). In the reverse of the card it is written by hand '*T. rubicunda* Nolle. Caledonia.' (Planche 26D). The glass-tube is glued to a card-board with an old label with the name '*Terebratella rubicanda* [sic] Solander; Localité Chatham Islands, New. Zel.' written on it (Planche 26B). A label with the registered number ML-ZOO-MAL-00039 is fixed in the reverse of the card-board. Another glass-tube seems to have been detached from the upper part of this card-board.

**Description.** The shells are small, biconvex being the ventral valve more convex, with the surface smooth, white with red dashes (Planches 25K, M-O, R, V, Y, AA; 26E-O). The outline is longitudinally subelliptical with maximum width at midvalve, anterior commissure rectimarginate (Planches 25M-O, R, V, Y, AA; 26L-O) to unisulcate (Planche 26J). Ventral beak, short, erect to slightly incurved, truncated, foramen large, meso to permesothyrid, deltidial plates disjunct but nearly conjunct (Planches 25M, R-U, Y-Z; 26E, G-H, L, O). Ventral interior with small teeth supported by short, ventrally recessive dental plates, pedicle collar short and sessile (Planches 25M, R-U, Y-Z; 26E, L, O). Dorsal interior with strong inner socket ridges and deep sockets, outer hinge plates and crural bases narrow, inner hinge plates not differentiated or rudimentary, cardinal process transverse and very small, crura short, crural processes bluntly pointed, median septum (septal pillar) thin and high, clear near midvalve (Planches 25V-X, AA, BB; 26M-N), loop bilacunar to incipiently bilateral (see Williams & Brunton, 1997, p. 425 and MacKinnon & Lee, 2006b, p. 2209 and fig. 1467, 1d) as shown in the specimen illustrated in Planche 26M but broken in the dorsal valve of Planche 25N and obscured by the remains of the lophophore in the specimen of Planche 25O-Q. The shell, as in other terebratulides, is endopunctate (e.g., Planche 25M-N).

**Remarks.** In the old label of the card-board to which the glass-tube containing the lot ML-ZOO-MAL-00038 is attached it is written the specific name '*Terebratula rubicunda* Sol.' (Planche 25L). Davidson (1887, part 2) in his monograph on Recent Brachiopods (p. 86) wrote that 'Mr. Donovan states, in the second volume of this 'Naturalist's Repository' that Solander had given the MS. name of '*rubicunda*' to the shell we now know as *Kraussina rubra* of Pallas, 1766; but as Solander did not publish his name, that of *rubicunda*, Sowerby, must be retained for the shell under description'. More recently, Cooper & Lee (1993, p. 266) when erecting their new genus *Calloria* with *Terebratula inconspicua* as type species, noticed that '*Terebratula inconspicua* G.B. Sowerby (1846 : 93 – typo error : should be 'p. 92') takes precedence over *Terebratula rubicunda* G.B. Sowerby (1846 : 92 – typo error : should be 'p. 93') which is preoccupied by *Terebratula rubicunda* DONOVAN, 1824 [= *Kraussina rubra* (Pallas)]'. So, '*Terebratula rubicunda*' SOWERBY, 1846 (Planche 25L) was considered a junior synonym of

'*Terebratula inconspicua*' SOWERBY, 1846, now *Calloria inconspicua* (Sowerby) (see Cooper & Lee, 1993, p. 266-77; see also MacKinnon & Lee, 2006d, p. 2231), a Recent brachiopod from New Zealand. However, the specimens of the lot ML-ZOO-MAL-00038 do not have the red colour displayed in concentric bands characteristic of *Calloria*, they are not unisulcate, nor anteriorly costate and in the dorsal interior the inner hinge plates do not meet to a low median septum forming septalium. By the contrary, they have all the characteristics of *Frenulina sanguinolenta* (GMELIN, 1791), shell of small size, ornamented with red stripes, with disjunct deltidial plates and brachial loop bilacular to incipiently bilateral (Cooper, 1973a, p. 21 and pl. 8, figs 12-16; MacKinnon & Lee, 2006b, p. 2210). Besides, the locality 'Tahiti' written by hand is consistent with the distribution of *Frenulina sanguinolenta* in the Pacific, Hawaiian Islands and Philippines (see Bitner 2006a, p. 420; 2006b, p. 28; 2009, p. 16; 2010, p. 649; Logan, 2007, p. 3102). From the above discussion, in this paper the shells of the lot ML-ZOO-MAL-00038 are assigned to *Frenulina sanguinolenta* (GMELIN, 1791). See also below the heading '**Remarks**' when describing the lot ML-MAL-01287 with *Pictothyris picta* (DILLWYN, 1817).

The specimens of the lot ML-ZOO-MAL-00039 are similar to those of the previous lot but differing in having a unisulcate anterior commissure (e.g., Planche 26J). The locality of this lot seems to be the waters around New Caledonia, in the southwestern Pacific Ocean, 1210 Km east of Australia following what it is written in the reverse of the card to which the specimens are fixed (Planche 26D), or the Chatham Islands, archipelago of ten islands about 680 km east of the southern island of New Zealand, if what it is written in the old label (Planche 26B) fixed in the card board to which the glass-tube is glued is accepted. In both cases its locality would be placed slightly to the southeastern of the previous lot and of the distribution commonly accepted for *Frenulina sanguinolenta* (see Logan, 2007, p. 3102 and references cited there).

### **Subfamily Pictothyridinae YABE & HATAI, 1941**

#### **Genus Pictothyris THOMSON, 1927**

**Type species:** *Anomia picta* DILLWYN, 1817, by original designation.

#### ***Pictothyris picta* (DILLWYN, 1817) (Planche 26P-BB)**

- 1817. *Anomia picta* DILLWYN, p. 295.
- 1887. *Laqueus pictus* (DILLWYN), Davidson p. 114 (with synonymy)
- 1916. *Laqueus pictus* (DILLWYN), Jackson p. 23.
- 1927. *Pictothyris picta* (DILLWYN), Thomson, p. 260 (with synonymy)
- 1932. *Pictothyris picta* (DILLWYN), Yabe, p. 194.
- 1934. *Pictothyris picta* (DILLWYN), Yabe & Hatai, p. 586.
- 1940. *Pictothyris picta* (DILLWYN), Hatai, p. 369.
- 1957. *Pictothyris picta* (DILLWYN), Cooper, p. 16 (with synonymy)
- 1996. *Pictothyris picta* (DILLWYN), Saito, p. 488.
- 2015. *Pictothyris picta* (DILLWYN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 10.

**Material.** An articulated specimen, loose in a glass-tube with a light brown card (Planche 26P). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of paper in which it is written by hand '*Laqueus pictus Chemnitz, Japon*' (Planche 26BB). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01287 stick to it.

**Description.** Shell of moderate size (L = 24 mm), longitudinally oval in outline (Planche 26Q, S), broadest about the middle of the shell, biconvex, slightly ventribiconvex (Planche 26T, V-W), colour yellowish red, slightly variegated (Planche 26P-Q, S-Y), smooth with only growth lines (Planche 26Q-AA), anterior commissure rectimarginate (Planche 26W-Y), ventral beak short, suberect (Planche 26T), foramen of medium size, mesothyrid, attrite, beak ridges strong, deltidial plates conjunct (Planche 26Q-R, U, Z). The shell, as in other terebratulides, is endopunctate (e.g., Planche 26AA).

**Remarks.** The only specimen of this lot is strongly articulated so, the internal characters (loop included) could not be observed (Planche 26X-Y), so, its assignation to *Pictothyris picta* (DILLWYN, 1817) is only tentative. As the glass-tube containing the specimen was detached from the card-board to which was originally glued, the only information available are the words '*Laqueus pictus Chemnitz, Japon*' written by hand in the piece of paper accompanying the specimen inside the glass-tube (Planche 26BB). Discussion on *Pictothyris* and its relation with *Laqueus* was provided by Yabe (1932, p. 193-197; see also Dall, 1920, p. 353).

The three laqueoide species here described and illustrated (Planches 25A-BB 26A-BB), have shells of yellowish red colour, more intensely coloured at the lines of growth in *Laqueus rubellus* (SOWERBY, 1846) (Planche 25A-J), white with red dashes in *Frenulina sanguinolenta* (GMELIN, 1791) (Planches 25M-BB, 26A-O), and colour yellowish red, slightly variegated in *Pictothyris picta* (DILLWYN, 1817) (Planche 26P-BB). Internally they have pedicle collar and dental plates in the ventral valve (Planches 25H-I, R-S, U, Y, 26G-H, L, O) and outer hinge plates well developed and cardinal processes, with transversely oval myophore, more or less developed in the dorsal valve (Planches 25D, F-G, V-X, AA, 26M-N). These three species differ mainly in the inner hinge plates, separated from the outer by crural bases and uniting with median septum to form septalium in *L. rubellus* (Planche 25D, F-G), being rudimentary and not united medianly in *F. sanguinolenta* (Planche 25O, V-X, AA) and absent, both inner and outer hinge plates, in *P. picta*. In addition, the cardinalia in *F. sanguinolenta* present rather strong inner socket ridges united on their inner side to crural bases (Planche 25O, V-X, AA). The myophore on the cardinal process is very short and transverse in *L. rubellus* (Planche 25D, F-G), small and striated in *F. sanguinolenta* (Planche 25V-W) and prominent and bilobed in *P. picta*. The adult loop is bilateral in *L. rubellus* (Planche 25D), laterovertical in *P. picta* (Planche 26X-Y) and bilacunar to incipiently bilateral in *F. sanguinolenta* (Planche 25O-Q, M-N) (see MacKinnon & Lee, 2006b, p. 2201-2209; Davidson, 1887, p. 113-114; Dall, 1920, p. 353; Yabe, 1932, p. 193).

**Family Terebrataliidae RICHARDSON, 1975**

**Subfamily Terebrataliinae RICHARDSON, 1975**

**Genus *Terebratalia* BEECHER, 1893**

**Type species:** *Terebratula transversa* G. B. SOWERBY, 1846, by original designation.

***Terebratalia coreanica* (ADAMS & REEVE, 1850)  
(Planche 27A-O)**

1850. *Terebratula coreanica* ADAMS & REEVE, p. 71.  
1863. *Terebratella coreanica* (ADAMS & REEVE), Adams, p. 99.  
1887. *Terebratella coreanica* (ADAMS & REEVE), Davidson p. 81 (with synonymy)  
1920. *Terebratalia coreanica* (ADAMS & REEVE), Dall, p. 345 (with synonymy)  
1937. *Terebratalia coreanica* (ADAMS & REEVE), Hatai, p. 323.  
1989. *Terebratalia coreanica* (ADAMS & REEVE), Richardson, Stewart & Liu, p. 214 (with synonymy)  
1996. *Terebratalia coreanica* (ADAMS & REEVE), Saito, p. 490.  
2015. *Terebratalia coreanica* (ADAMS & REEVE), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 11.

**Material.** An articulated specimen, loose in a glass-tube with a light brown card (Planche 27A). In the reverse of the card it is written by hand '*Terebratella coreanica* Adams and Reeve Japan' (Planche 27B). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00042 stick to it.

**Description.** Shell large (L = 40 mm), subcircular to elongate oval, broadest posteriorly (Planche 27C-D). Shell ventribiconvex, orange-red throughout, smooth, with only growth lines (Planche 27C-H), slightly lamellose especially those more posteriorly placed (Planche 27F), endopunctate. Dorsal valve with wide, shallow median sulcus (Planche 27C, E-F). Ventral valve strongly keeled longitudinally (Planche 27D,G); beak short, incurved to suberect and truncated by a circular and large foramen, mesothyrid, bounded anteriorly by two deltidial plates; beak-ridges sharp (Planche 27C, H-J). In the interior of the dorsal valve there is a well developed cardinal process with transversely oval myophore (Planche 27K-O), the cardinalia is strong with some median shell thickening, dorsal adjustor scars impressed on thickened inner socket ridges, crura long, slender, circular in cross section, loop large, trabecular with very slender, lateral connecting bands extending from a low median septum that prolongs to about half the length of the valve (Planche 27K-O). In the interior of the ventral valve the pedicle collar is short, the dental plates ventrally recessive, lateral umbonal cavities moderately infill with secondary shell (Planche 27I-J).

**Remarks.** As the glass-tube containing the specimen was detached from the card-board to which was originally glued, the only information available are the words '*Terebratella coreanica*

Adams & Reeve Japon' written by hand in the reverse of the card included in the glass-tube and to which the articulated specimen was originally fixed (Planche 27B). The specimens of *T. coreanica* from Japanese waters seem to attend larger size than those from adjacent areas. The maximum length of the shells from Japan recorded by Hatai (1937, p. 324) was 53 mm while the largest shells in the Institute of Oceanology of the Academia Sinica are 34 mm long (Richardson *et al.*, 1989, p. 214 and table 2). The length of the articulated specimen of the lot ML-ZOO-MAL-00042 is of 40 mm, size that agrees with that provided by those authors for specimens from Japanese waters.

### **Genus *Coptothyris* JACKSON, 1918**

**Type species:** *Terebratula grayi* DAVIDSON, 1852, by original designation.

#### ***Coptothyris grayi* (DAVIDSON, 1852) (Planches 27P-V, 28A-M)**

- 1852. *Terebratula grayii* DAVIDSON, p. 76.
- 1863. *Waldheimia Grayi* (DAVIDSON), Adams, p. 99.
- 1871. *Magasella adamsi* DAVIDSON, p. 307.
- 1886. *Waldheimia Grayi* (DAVIDSON), Davidson, p. 54.
- 1891. *Eudesia grayi* (DAVIDSON), Dall, p. 172.
- 1893. *Dallina grayi* (DAVIDSON), Beecher, p. 380.
- 1906. *Waldheimia grayi* (DAVIDSON), Tokunaga, p. 69.
- 1916. *Thomsonia grayi* (DAVIDSON), Jackson, p. 21.
- 1918. *Coptothyris grayi* (DAVIDSON), Jackson, p. 479.
- 1927. *Terebratula grayi* DAVIDSON, Thomson, p. 247.
- 1952. *Coptothyris grayi* (DAVIDSON), Hayasaka & Uozumi, p. 93 (with synonymy)
- 1996. *Coptothyris grayi* (DAVIDSON), Saito, p. 490.
- 2006b. *Coptothyris grayi* (DAVIDSON), MacKinnon & Lee, p. 2212.
- 2015. *Coptothyris grayi* (DAVIDSON), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 10.

**Material.** A dorsal valve and a ventral valve, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 28B-M). This tube is glued to a card-board with an old label with the name '*Terebratella Grayi* Davidson, Mers du Japon, Ach. 1883' written on it (Planche 28A). A label with the registered number ML-ZOO-MAL-00041 is fixed in the reverse of the card-board.

A dorsal valve and a ventral probably the counterpart of the preceding, fixed to a blue card and introduced into a glass-tube (Planche 27P). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00111 stick to it.

**Description.** Shell of medium to large size, ventribiconvex in lateral profile (Planche 28D, H), transversely oval almost round in dorsal outline (Planches 27P; 28B,I, L), multicostate and slightly unisulcate (Planches 27P-Q, S, U-V; 28D-E, H, J-K), ventral beak short, suberect, attrite, foramen large, mesothyrid, deltidial plates conjunct, beak ridges well marked (Planches 27V; 28K-M). Pedicle collar short, sessile, hinge teeth strong, dental plates ventrally recessive with much reduced lateral umbonal cavities (Planches 27V; 28K-M). Inner hinge plates forming sessile septalium (Planches 27Q-R, U; 28B, F). Loop trabecular (cf. MacKinnon & Lee, 2006a, fig. 1312) (Planches 27P-U; 28B-G). The shell, as in other terebratulides, is endopunctate.

**Remarks.** The locality 'Mers du Japon' as written in the label (Planche 28A), is in agreement with the distribution of the species (e.g., Logan, 2007, p. 3103).

**Superfamily Megathyridoidea DALL, 1870**

**Family Megathyrididae DALL, 1870**

**Genus *Megathiris* d'ORBIGNY, 1847**

**Type species:** *Anomia detruncata* GMELIN, 1791, by original designation.

***Megathiris detruncata* (GMELIN, 1791)**

**(Planches 29A-AA, 30A-X, 31A-S, 32A-V, 33A-MM, 34A-U, 36AA-EE)**

- 1791. *Anomia detruncata* GMELIN, p. 3347.
- 1842. *Argiope detruncata* (GMELIN), Eudes-Deslongchamps, p. ix.
- 1847. *Megathiris detruncata* (GMELIN), d'Orbigny, p. 269.
- 1850. *Argiope detruncata* (GMELIN), Davidson, p. 71.
- 1850. *Megathiris detruncata* (GMELIN), d'Orbigny, p. 147.
- 1853. *Argiope decollata* CHEMNITZ, Gray, p. 113 (with synonymy)
- 1887. *Megathiris decollata*, GMELIN (*sic*), Ehlert, p. 1202, fig. 928.
- 1887. *Megathiris decollata*, CHEMNITZ (*sic*), Ehlert, p. 1212, 1328, figs 954, 1129, pl. 15, fig. 10.
- 1887. *Argiope decollata* CHEMNITZ, Davidson, p. 128 (with synonymy)
- 1891. *Megathiris decollata* (CHEMNITZ), Fischer & Ehlert, p. 102.
- 1920. *Megathiris detruncata* (GMELIN), Dall, p. 330 (with synonymy)
- 1927. *Megathiris detruncata* (GMELIN), Thomson, p. 213 (with synonymy)
- 1960c. *Megathiris detruncata* (GMELIN), Atkins, p. 459
- 1977. *Megathiris detruncata* (GMELIN), Cooper, p. 121 (with synonymy)
- 1979. *Megathiris detruncata* (GMELIN), Brunton & Curry, p. 43 (with synonymy)
- 1979. *Megathiris detruncata* (GMELIN), Logan, p. 55 (with synonymy)
- 1986. *Megathiris detruncata* (GMELIN), Templado & Luque, p. 113.
- 1994. *Megathiris detruncata* (GMELIN), Anadón, p. 70.
- 2001. *Megathiris detruncata* (GMELIN), Logan, p. 67-71.

2003. *Megathiris detruncata* (GMELIN), Logan, p. 6.
2005. *Megathiris detruncata* (GMELIN), Álvarez & Emig, p. 147 (with synonymy)
2006. *Megathiris detruncata* (GMELIN), Lee, MacKinnon & Smirnova, p. 2218.
2006. *Megathiris detruncata* (GMELIN), Zezina, p. 71.
- 2008a. *Megathiris detruncata* (GMELIN), Álvarez, Brunton & Long, p. 294.
2012. *Megathiris detruncata* (GMELIN), Emig, p. 20 (with synonymy)
2015. *Megathiris detruncata* (GMELIN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 11.

**Material.** A glass-tube with three disarticulated dorsal valves, one ventral and one articulated specimen fixed by the ventral valve to a card (Planche 34B). The glass-tube is glued to a card-board with an old label with the name '*Megathiris decollata* Chemnitz sp.; Localité Cap Blanc 120' written on it (Planche 34A). A label with the registered number ML-ZOO-MAL-00022 is fixed in the reverse of the card-board.

In a second glass-tube there are three disarticulated dorsal valves and two ventral valves fixed to a card (Planche 34K-L). The glass-tube is glued to a card-board with an old label with the name '*Argiope decollata*; Localité Méditerranée' written on it (Planche 34J). A label with the registered number ML-ZOO-MAL-00027 is fixed in the reverse of the card-board.

Besides the lots described above, there are other seven in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- Two articulated specimens, two dorsal valves and one ventral fixed to a light blue card introduced into a glass-tube (Planche 29A). In the reverse of the card it appears written by hand '*Talisman*. Prof. 120. Loc: Cap Blanc' (Planche 29B). The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00020 fixed on it.
- Two articulated specimens fixed to a glass-slide with a card of bright black colour below and introduced into a broken glass-tube (Planche 30A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00055 stick to it.
- An articulated specimen and a ventral valve fixed to a light green card introduced into a small glass-tube (Planche 30L). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00062 stick to it.
- Four articulated specimens loose in a glass-tube with a light green card with nothing written on it (Planche 30U). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00070 stick to it.
- Two articulated specimens, five disarticulated dorsal valves and three ventral fixed to a light green card introduced into a glass-tube (Planche 31H). In the reverse of the card nothing is



written. The glass-tube that had been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00078 stick to it.

- Fourteen articulated specimens, five disarticulated dorsal valves, four ventral and the valve of a disarticulated bivalve loose in a glass-tube with a light green card with nothing written on it (Planche 33A-EE). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00082 stick to it.

- Two articulated specimens and a disarticulated dorsal valve fixed to a light green card introduced into a small glass-tube (Planche 33II). In the reverse of the card nothing is written. The glass-tube that was detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00083 stick to it. Of the two articulated specimens, that of the smallest size has the distinctive red colouration between ribs and a dorsal interior with median septum high and wide anteriorly, without accessory septa characteristic of adult *Argyrotheca cuneata* (RISSO, 1826) and will be described further below.

**Description.** Shells small in size, light brown, outline subquadrate, broadly transverse, posterior margin wide, strophic or nearly so (Planches 29C-D, H-I, K-M, P-T, W-AA; 30A, I, K, M-N, S-T, V-X; 31I-J, L-S; 32A-G, J-P, T-U; 33B-E, I-M, O-DD, MM-NN; 34C-I, K-U), with well-developed interareas, specially the ventral (Planches 29D, K, M, R; 30J-K, N, P; 31B, I-J, L; 32O, T; 33L, P, T, W; 34D, F-G, M-O, R-S). Ventribiconvex in lateral profile (Planches 30J-K, P; 31B-C; 32O), exterior with ribs wide and rounded (Planches 29C-D, H-I; 30B-D, I-K, M-N; 31A-D; 33D, R-S, U-V, X-DD; 34C), anterior commissure rectimarginate to slightly uniplicate (Planches 29I, Y; 30D-F, O; 31C, E-F, O; 32L, Q; 33B-C, E, G). Ventral beak short, attrite; foramen large, hypothrid, deltidial plates disjunct, poorly developed (Planches 29D, H-I, K-N; 30I-K, M-N, V, X; 31B, I-J, L; 32O-P, S-V; 33A, D, F, L, P, R-EE; 34D, F-G, M-O, R-S), the pedicle is very short (Planches 29H-I; 30V, X; 31B; 34D), permitting attrition of the ventral beak. Hinge teeth small, elongate, widely separate, without dental plates (e.g., Planche 30F-G), pedicle collar well developed, long and wide, elevated, supported by long, narrow median (ventral) septum extending, together with two subdued lateral septa, almost to the anterior margin of the valve (Planches 29K-N; 30S-T; 31I-L; 32T-V; 33B-C, G, L, P, T, W; 34F-G, M-O, R-S). Cardinalia with low hinge platform uniting two prominent socket ridges; cardinal process small, transverse; grooved crura short, widely separated, crural processes prominent, horizontal, pointed; median septum very long, narrow, low posteriorly and higher anteriorly; flanked in anterior part of shell by two lateral septa reaching to near middle of dorsal valve (Planches 29E-G, J-AA; 30D-F, O, Q; 31E-G, M-S; 32A-N, Q-R; 33B-C, E, G-K, M-O, KK-MM; 34E, H-I, P-Q, T-U), with growth, the anterior edge of the septa may become tuberculate or serrated, when viewed laterally (e.g., Planches 29F-G, Y, AA; 30Q-R; 31E-G; 32E-F, H-N, R; 33H); crura very short, crural processes large, convergent, loop of two slender, arcuate descending branches free only near crura, attached to base of crura, valve floor, and anterior extremities of lateral septa and median septum (Planches 29E-G, J, O-AA; 30D-F, H, O, Q; 31D-G, M-S; 32A-N, Q-R; 33B-C, E, G-K, M-O, Q, KK-MM; 34E, H-I, P-Q, T-U); lophophore attached to dorsal mantle, ptycholophous (Planches 29J; 30D-F, H, O-Q; 31D-G; 32E-H, Q-R; 34I). The shell, as in other terebratulides, is endopunctate (e.g., Planches 30C; 31K; 32N).

**Remarks.** Dall (1920, p. 331) has shown that, as Chemnitz's name of '*Anomia decollata*' (the name written in the Museum label) is not binomial so, Gmelin's name '*Anomia detruncata*' should be used for the type species of *Megathiris* (Thomson 1927, p. 213).

The specimen illustrated in Planche 34C-D of the lot ML-ZOO-MAL-00022, is similar to that illustrated by Fischer & Cehlert (1891, pl. 8, fig. 16f-g). This specimen could come from the station 1, expedition *Travailleur*, 1st dredge, done the 15 of June 1881, 'Profondeur 120m' 'Cap Blanc (Maroc)': this cape is named cap Blanc du Nord, south of El Jadida (Morocco). Two other stations from the same area provided specimens of *Megathiris detruncata*, they are the stations four and five, expedition *Le Talisman*, dredges 23 and 24, done the 15 of June 1883, 'Profondeur 120m' (Planche 34A; see also Fischer & Cehlert, 1891, p. 105).

The articulated specimen of the lot ML-ZOO-MAL-00082, illustrated in Planche 33F, resembles that illustrated by Fischer & Cehlert (1891, pl. 8, fig. 16b). No information is included with the glass-tubes containing this lot. The disarticulated ventral valve of the lot ML-ZOO-MAL-00027, illustrated in Planche 34R, resembles that illustrated by Fischer & Cehlert (1891, pl. 8, fig. 16c). This valve came from the 'Méditerranée' (Planche 34J), no more precision about vessel, locality, station, dredging or year seems to be available.

The dorsal valve of the lot ML-ZOO-MAL-00020, illustrated in Planche 29O-V resembles that illustrated by Fischer & Cehlert (1891, pl. 8, fig. 16e). The ventral valve of this lot, illustrated in Planche 29K is rather similar to that illustrated by Fischer & Cehlert (1891, pl. 8, fig. 16d). This lot came from 'Cap Blanc, prof. 120, *Talisman*' (Planche 29B). There are three stations done in 'Cap Blanc' and at a depth of 120 m, the station number one done with *Le Travailleur* and the stations four and five with *Le Talisman* (Fischer & Cehlert, 1891, p. 105). *Talisman* is the name written in the reverse of the card to which the specimens of the lot ML-ZOO-MAL-00020 are fixed.

Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Megathyrus decollata* Chemnitz sp.' written on it and 'Côte du Portugal' as '*Localité*' (Planche 36BB) without any label with registered number fixed in the reverse of it. These data correspond with those of the station two [*Travailleur*, 1882, 'Dragage' 22, '20 juillet, Profondeur 70m'] of Fischer & Cehlert (1891, p. 105). There are other four card-boards also with the name '*Megathyrus decollata* Chemnitz sp.' written on it and 'La Calle, Algérie', 'Méditerranée', 'La Galite, Tunis. Prof. 111' and 'Bodayna' as localities (Planche 36AA, CC-EE). None of these appear in the list provided by Fischer & Cehlert (1891, p. 105). The so called '*Megathyrus decollata* Chemnitz sp.' is described here as *Megathiris detruncata* (Gmelin).

### **Genus *Argyrotheca* DALL, 1900**

**Type species:** *Terebratula cuneata* RISSO, 1826, by original designation.

***Argyrotheca cuneata* (RISSO, 1826)  
(Planches 33II, NN, 34V-GG, 35A-G)**

1826. *Terebratula cuneata* RISSO, p. 388.  
 1853. *Cistella cuneata* (RISSO); Gray, p. 114.  
 1878. *Argiope cuneata* (RISSO); Jeffreys, p. 410.  
 1920. *Argyrotheca cuneata* (RISSO); Dall, p. 326.  
 1979. *Argyrotheca cuneata* (RISSO); Brunton & Curry, p. 44 (with synonymy)  
 2003. *Argyrotheca cuneata* (RISSO); Logan, p. 4.  
 2005. *Argyrotheca cuneata* (RISSO); Álvarez & Emig, p. 149, 221 (with synonymy)  
 2012. *Argyrotheca cuneata* (RISSO); Emig, p. 19 (with synonymy)  
 2015. *Argyrotheca cuneata* (RISSO); Emig, Álvarez & Bitner, WoRMS Taxon List, p. 11.

**Material.** Two articulated specimens and a dorsal valve fixed to a light green card introduced into a small glass-tube (Planche 33II). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which it was originally glued is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00083 stick to it. Of the two articulated specimens, that of the smallest size has the distinctive red colouration between ribs and a dorsal interior with median septum high and wide anteriorly, without accessory septa, characteristic of adult *Argyrotheca cuneata* (RISSO, 1826) and is described here (see also Planches 33NN and 35A-G). The other articulated specimen and the disarticulated dorsal valve lack this colouration and have the characteristic loop of *Megathiris*. Both were described above (Planche 33II- MM).

Three small, articulated specimens and other three disarticulated fixed to a glass-slide introduced into a glass-tube (Planche 34V-GG). In the left side of the glass-slide there is an old label with the name '*Argiope decollata* Méditerr. La Calle Beyr.' written on it (Planche 34V). In the cork of the glass-tube there is a '48' written (Planche 34X). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00065 stick to it. The six specimens have the distinctive red colouration between ribs and the dorsal characteristic of *Argyrotheca cuneata* (RISSO, 1826) and are described here. 'La Calle', now called 'El Kala', is a municipality in the 'El Tarf' wilaya (Algeria).

**Description.** White or grey small shells with a distinctive red or pink colouration between ribs (Planches 34Y-GG; 35A-G), biconvex to ventribiconvex (Planche 35C-F), with outline variable, from transversely subrectangular to subcircular, maximum width near or at hinge (Planches 34AA-GG; 35A-B), with 6 to 8 broad, rounded, low, ribs; growth lines faint (Planches 34AA-GG; 35A-B). Anterior commissure rectimarginate to faintly uniplicate and slightly undulate because of the broad ribs (Planche 35E-G). Ventral beak short, abraded, the pedicle foramen is large, hypothryid, and the deltidial plates do not join medianly (Planches 34EE-FF; 35B-C). Ventral cardinal area broadly triangular, flat, apsacline (Planches 34EE-FF; 35B-D). Ventral interior with pedicle collar supported by median septum that extends to mid valve (Planches 34Y, BB, FF; 35B-C). Teeth without dental plates (Planche 34Y-Z, BB). Dorsal interior with median septum high and wide anteriorly, without accessory septa, brachidium formed of two slender, arcuate lamellae attached to base of crura, valve floor and anterior extremity of median septum, dorsal median septum developed only anteriorly (Planches 34Y-Z, BB; 35E-G), lophophore

schizolophous (Planche 35G). Evident endopunctuation (Planches 34Y-GG; 35A-B).

**Remarks.** *Argyrotheca cuneata* (RISSO, 1826) is a frequent species in relatively shallow waters in the Mediterranean Sea (e.g., Álvarez & Emig, 2005, p. 151 and references quoted therein). So, the locality 'La Calle Beyr' as written in the old label (Planche 34V), is in agreement with the distribution of the species (e.g., Álvarez & Emig, 2005, p. 151; Logan 2007, p. 3106).

### **Genus *Joania* ÁLVAREZ, BRUNTON & LONG, 2008**

**Type species:** *Terebratula cordata* RISSO, 1826, by original designation.

#### ***Joania cordata* (RISSO, 1826) (Planches 35H-FF, 36A-Z)**

- 1826. *Terebratula cordata* RISSO, p. 389.
- 1833. *Terebratula neapolitana* SCACCHI, p. 18 (*non* DELLE CHIAJE, 1830)
- 1878. *Argiope neapolitana* (SCACCHI), Jeffreys, p. 409.
- 1887. *Cistella neapolitana* (SCACCHI), Davidson, p. 131 (with synonymy)
- 1887. *Cistella Neapolitana (sic)* (SCACCHI), Ehlert, p. 1328.
- 1920. *Argyrotheca cordata* (RISSO), Dall, p. 327 (with synonymy)
- 1960c. *Argyrotheca cordata* (RISSO), Atkins, p. 460-463.
- 1979. *Argyrotheca cordata* (RISSO), Logan, p. 50 (with synonymy)
- 1983. *Argyrotheca cordata* (RISSO), Logan, p. 174.
- 1983. *Argyrotheca cordata* (RISSO), Logan & Noble, p. 38.
- 1986. *Argyrotheca cordata* (RISSO), Templado & Luque, p. 113.
- 1988a. *Argyrotheca cordata* (RISSO), Logan, p. 66.
- 1989. *Argyrotheca cordata* (RISSO), Brunton, p. 160 (with synonymy)
- 2003. *Argyrotheca cordata* (RISSO), Logan, p. 5.
- 2005. *Argyrotheca cordata* (RISSO), Álvarez & Emig, p. 155, 222 (with synonymy)
- 2005. *Argyrotheca cordata* (RISSO), Álvarez, Martínez, Núñez & Núñez, p. 267 (with synonymy)
- 2006. *Argyrotheca cordata* (RISSO), Zezina, p. 72.
- 2008a. *Argyrotheca cordata* (RISSO), Álvarez, Brunton & Long, p. 292.
- 2008b. *Joania cordata* (RISSO), Álvarez, Brunton & Long, p. 400.
- 2010. *Joania cordata* (RISSO), Simon, p. 285.
- 2012. *Joania cordata* (RISSO), Emig, p. 19. (with synonymy)
- 2015. *Joania cordata* (RISSO), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 11

**Material.** A glass-tube with two disarticulated ventral valves and one dorsal fixed to a card (Planche 36U). The glass-tube is glued to card-board with an old label with the name '*Cistella cuneata*? Risso; Localité Méditerranée' written on it (Planche 36T). A label with the registered number ML-ZOO-MAL-00030 is fixed in the reverse of the card-board.

In addition to the lot described above, there are other two in which the glass-tube(s) containing the specimens have been detached from the card-board(s) to which they were originally glued. These are:

- A ventral valve and a dorsal valve probably the counterpart of the preceding, fixed to a glass slide with a light blue card underneath and introduced into a small glass-tube (Planche 35H). In the reverse of the glass slide nothing is written, but in the cork of the glass the number 42 it is written (Planche 35I). The glass-tube is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00061 stick to it.

- Three articulated specimens, two dorsal valves and two ventral, probably the counterparts of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 35T). In the reverse of the card nothing is written. The glass-tube is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00064 stick to it.

**Description.** Small size, with narrow hinge line and elongate subpentagonal weakly heart-shaped outline, profile biconvex to ventribiconvex, anterior commissure rectimarginate, externally with few rounded and weakly defined ribs (Planches 35U, X; 36F, I). Ventral umbo slightly recurved, with large, hypothryid pedicle opening and narrow deltidial plates, ventral cardinal area high, triangular, apsacline, slightly abraded (Planches 35Q, S, U-W, EE-DD; 36A-B, F-H, X-Y). Ventral valve interior with pedicle collar supported by sharp median septum that extends beyond mid valve; teeth hook-like, without dental plates (Planches 35Q, S, U-W, EE-DD; 36A-B, F-H, X-Y). Dorsal valve interior with strong, short-shafted cardinal process (Planches 35N, Y, AA; 36E, O-P, V-W), median septum with slightly tuberculated antero-ventral edge (Planches 35O, Z; 36C-D, K, J-L), radial ridges with well defined tubercles submarginally, anterior to weakly defined descending lamellae of brachidium (e.g., Planches 35K, L-M, O, Y, Z, BB; 36C-D, J, K, Q-R, V), raised only posteriorly and at edges of median septum (e.g., Planches 35J-P, Y, Z, BB; 36C-D, J-K, L, Q-R, V-W). The shell, as in other terebratulides, is endopunctate (e.g., Planche 35M, P-R).

**Remarks.** In the 'Appendice' of Fischer & Ehlert (1891, p. 130) they describe but do not illustrate '*Cistella cistellula* Searles-Wood' [sic], recovered with *Le Talisman* from the coast of Morocco, Canary Islands and the Azores.

In the lots studied from the Laval collection, there are three, ML-ZOO-MAL-00030, ML-ZOO-MAL-00061 and ML-ZOO-MAL-00064, with *Argyrotheca*-like specimens that are here assigned to *Joania cordata* (Risso) (see Álvarez *et al.*, 2008b, p. 400). These specimens are of relatively small size, outline varying from elongate heart-shaped to rounded subrectangular, with narrow hinge, profile biconvex to ventri-biconvex. Dorsal interior with strong, short-shafted cardinal process; median septum with tuberculate antero-ventral edge; radial ridges with well defined tubercles submarginally, anterior to weakly defined descending lamellae of brachidium, raised only posteriorly and at edges of median septum (e.g., Planches 35J-P, Y-CC; 36C-E, J-L, Q-R, V-W). The first lot come from the 'Méditerranée' as stated in the old label of the card board (Planche 36T). No information is included with the glass-tubes containing the other two lots.

Besides the three lots above, the shell of the smallest specimen of the lot ML-ZOO-MAL-00012, assigned above to *Terebratulina retusa* (LINNAEUS, 1758) resembles more that of a very small *Joania cordata* more than that of a *Terebratulina* (Planche 12J-K). The shell is too small and tightly articulated to see its internal morphology without breaking it. So, it is only tentatively assigned it to *Joania cordata*.

Among the card-boards from which the glass-tubes have been detached there are two with an old label with the name '*Cistella neapolitana* Scacchi' written on it and 'La Calle, Algérie' as 'Localité' (Planche 36Z) without any label with registered number fixed in the reverse of it. '*Cistella neapolitana* Scacchi' is considered here as *Joania cordata* (RISSO, 1826) (see Álvarez *et al.*, 2008b).

### **Superfamily Platidioidea DALL, 1870**

#### **Family Platidiidae DALL, 1870**

#### **Subfamily Platidiinae DALL, 1870**

#### **Genus *Platidia* COSTA, 1852**

**Type species:** *Orthis anomioides* SCACCHI & PHILIPPI, in PHILIPPI 1844, p. 69, by original designation.

#### ***Platidia anomioides* (SCACCHI & PHILIPPI, in PHILIPPI 1844) (Planches 37A-DD, 39A-Q)**

- 1844. *Orthis anomioides* SCACCHI & PHILIPPI, in PHILIPPI, p. 69.
- 1844. *Terebratula appresa* FORBES, p. 193.
- 1852b. *Morrisia anomioides* (SCACCHI & PHILIPPI), Davidson, p. 79.
- 1878. *Platydia anomioides* (SCACCHI & PHILIPPI), Jeffreys, p. 411.
- 1887. *Platydia anomioides* (SCACCHI & PHILIPPI), Cehlert, p. 1202, 1323.
- 1891. *Platidia anomioides* (SCACCHI & PHILIPPI), Fischer & Cehlert, p. 92.
- 1959a. *Platidia anomioides* (SCACCHI & PHILIPPI), Atkins, p. 118.
- 1977. *Platidia anomioides* (SCACCHI & PHILIPPI), Cooper, p. 122 (with synonymy)
- 1979. *Platidia anomioides* (SCACCHI & PHILIPPI), Brunton & Curry, p. 48 (with synonymy)
- 1979. *Platidia anomioides* (SCACCHI & PHILIPPI), Logan, p. 60 (with synonymy)
- 1989. *Platidia anomioides* (SCACCHI & PHILIPPI), Foster, p. 288 (with synonymy)
- 1994. *Platidia anomioides* (SCACCHI & PHILIPPI), Anadón, p. 69.
- 2005. *Platidia anomioides* (SCACCHI & PHILIPPI), Álvarez & Emig, p. 163, 222 (with synonymy)
- 2015. *Platidia anomioides* (SCACCHI & PHILIPPI), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 12.

**Material.** Two ventral valves, broken and only partially preserved, fixed to a light blue card introduced into a glass-tube (Planche 37A). In the reverse of the card it appears written by hand '*Talisman* 1883, 8 Juillet, Drag. 62, Prof. 782-640, Cap. Bojador. *Plat. anomioides*' (Planche 37B). The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00009 fixed on it.

- A ventral valve and a dorsal valve, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 37J). In the reverse of the card nothing is written. The glass-tube is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00054 stick to it.

- Two disarticulated ventral valves and two dorsal probably belonging to two disarticulated specimens, fixed to a light blue card introduced into a glass-tube (Planche 39A-N). In the reverse of the card nothing is written. The glass-tube is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00058 stick to it.

**Description.** Shell small (L = 5 mm), thin, semitransparent, white or yellowish in colour, circular to transversely oval in outline with maximum width at about mid shell length, ventribiconvex with dorsal valve almost flat, anterior commissure rectimarginate, smooth except for few growth lines (e.g., Planches 37K-L, 39B, D, G). Ventral beak suberect, the pedicle foramen is large, amphithyrid, shared by delthyrium and notch (large and hemispherical in shape) in beak of dorsal valve, deltidial plates very narrow, disjunct (e.g., Planches 37C-I, K, O-Q; 39B-C, G-L). Pedicle collar short, sessile; hinge teeth small with narrow dental plates; short ventral myophragm (Planches 37E-I; 39I-L). Cardinal process absent; inner socket ridges strong; outer socket ridges narrow; hinge plates not developed, crura, long and slender, with short processes, extending directly from inner socket ridges (e.g., Planche 37S-DD); brachial support of complete descending branches growing from crura to join upraised dorsal median septum and very short, divergent ascending branches arising from apex of median septum (e.g., Planches 37S-DD; 39D-F). Remains of the internal epithelia and complete and dried zygolophous lophophore, could be seen seemingly in place (Planche 39M-N). The shell, as in other terebratulides, is endopunctate (e.g., Planches 37R; 39H).

**Remarks.** Among the card-boards from which the glass-tubes have been detached there are three with an old label with the name '*Platidia anomioides*' written on it and with 'Cap. Spartel Maroc' (Prof. 717m), 'Cap. Bojador' (Prof. 640-782 m) and 'Cap Gros Méditerranée' (Prof. 86 m.) as 'Localities' (Planche 39O-Q). The data of the first two card-boards correspond with those of the stations 5 and 6, *Le Talisman* 1883, dredgings 10 and 65 (10 juin and 8 juillet) respectively, listed by Fischer & Ehlert (1891, p. 95). No registered numbers were fixed in the reverse of these four card-boards. The data on the label of the third card board do not appear in the list provided by Fischer & Ehlert (1891, p. 95). The card-board with the name '*Platidia anomioides*' and 'Cap. Bojador (Prof. 640-782 m)' written on it (Planche 39O) could be that originally associated with lot ML-ZOO-MAL-00009 (Planche 37A-B). There is a fourth card-board from which the glass-tube has been detached with an old label with the name '*Platidia incerta*' (not '*anomioides*') and 'Acores, Prof 29995 m' written on it (Planche 39R). The tube with the lot ML-ZOO-MAL-00023 (Planche 39S) could be that originally associated with this card-board [see further comments on '**Remarks**' to *Leptothyrella incerta* (DAVIDSON, 1878)].

The disarticulated dorsal valve of the lot ML-ZOO-MAL-00054 illustrated in Planche 37S-DD, resembles that illustrated by Fischer & Cœhlert (1891, pl. 8, fig. 14e-f). The dorsal valve with preserved dried lophophore of the lot ML-ZOO-MAL-00058 illustrated in Planche 39M-N resembles the one illustrated by Fischer & Cœhlert (1891, pl. 8, fig. 14g). Finally, the disarticulated dorsal and ventral valves illustrated in Planche 37J-L, S and 39B, D, (of the lots ML-ZOO-MAL-00054 and ML-ZOO-MAL-00058 respectively) resemble those of the articulated specimen illustrated by Fischer & Cœhlert (1891, pl. 8, fig. 14a-d). No information is included with the glass-tubes containing these two lots.

***Platidia davidsoni* (EUDES-DESLONGCHAMPS, 1855)  
(Planche 38A-GG)**

- 1855. *Morrisia davidsoni* EUDES-DESLONGCHAMPS, in DAVIDSON, p. 443.
- 1870. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Dall, 1870, p. 143.
- 1887. *Platydia davidsoni* (EUDES-DESLONGCHAMPS), Davidson, p. 154.
- 1890a. *Platydia davidsoni* (EUDES-DESLONGCHAMPS), Fischer & Cœhlert, p. 121.
- 1891. *Platydia davidsoni* (EUDES-DESLONGCHAMPS), Fischer & Cœhlert, p. 100.
- 1892a. *Platydia davidsoni* (EUDES-DESLONGCHAMPS), Fischer & Cœhlert, p. 21.
- 1959. *Platidia anomioides* (SCACCHI & PHILIPPI), Atkins, p. 103.
- 1977. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Cooper, p. 123 (with synonymy)
- 1979. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Brunton & Curry, p. 50.
- 1979. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Logan, p. 65 (with synonymy)
- 2005. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Álvarez & Emig, p. 163, 222 (with synonymy)
- 2015. *Platidia davidsoni* (EUDES-DESLONGCHAMPS), Emig, Álvarez & Bitner, 12 [Accepted as *Platidia anomioides* (SCACCHI & PHILIPPI, 1844)]

**Material.** Two articulated specimens, the first fixed by the ventral valve and the second by the dorsal valve, plus a dorsal valve and a ventral probably the counterpart of the preceding, fixed all to a light blue card introduced into a glass-tube (Planche 38A). In the reverse of the card nothing is written. The glass-tube is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00066 stick to it.

**Description.** Shell similar to that of *Platidia anomioides* although slightly larger (L = 8 mm), brownish in colour (Planche 38B-G, S) and with numerous small tubercles on the external surface of the ventral valve (Planche 38S-V); dorsal valve irregular, reflecting the irregularities of the substrate upon which the brachiopod lives (Planche 38B-I, L, P, Z, BB). In one of the specimens, the anterior commissure is indented (Planche 38S-W) and in a second specimen the anterior commissure presents an anterolateral undulation (arrowed in Planche 38S-W, BB). Brachial support incomplete, with descending branches absent and short ascending branches (Planche 38I-N, X-FF). Shell endopunctate (e.g., Planche 38Y).



**Remarks.** The shell of *Platidia davidsoni* differs from that of *P. anomioides* in being slightly larger, having the ventral valve an ornamentation of small tubercles (e.g., Planche 38S-V) and a brachial support incomplete with descending branches absent and ascending branches short in *Platidia davidsoni*, being the brachial support in *P. anomioides* of complete descending branches growing from crura to join upraised dorsal median septum and very short, divergent ascending branches arising from apex of median septum (compare Planche 37S-DD with Planche 38I-N, X-EE) (see also discussion in Atkins, 1959a, p. 118; 1959b, p. 137, 140; Cooper 1977, p. 124; Logan 1979, p. 61, 6; Álvarez & Emig, 2005, p. 164; Álvarez *et al.*, 2005, p. 235).

The loop illustrated by Fischer & Ehlert (1891, pl. 8, fig. 15b-c labelled as *P. davidsoni*) clearly shows two divergent ascending branches arising from apex of dorsal median septum what is typical of *Platidia anomioides* and not of *Platidia davidsoni* (see Planche 38I-N, X-FF and comment above) as stated in the caption for the Planche.

'*Platidia Davidsoni* E. Deslongchamps' was recovered in the 'Golfe de Gascogne', stations a and b, done with the *Hirondelle* the second, and fourth (respectively) of August 1886, and listed by Fischer & Ehlert, 1890a, p. 121. Later, these authors in their monograph 'Brachiopodes provenant des campagnes du yach l'*Hirondelle* dans l'Atlantique Nord' (1892a, p. 21 and 24) listed three stations in which '*Platidia Davidsoni*' was recovered. These stations are number 53 (second of August 1886, 'Golfe de Gascogne'), 56 (fourth of August 1886, 'Golfe de Gascogne') and 234 (19 of August 1888, 'Acores')

### **Subfamily Phaneroporinae ZEZINA, 1981**

### **Genus Leptothyrella MUIR-WOOD, 1965**

**Type species:** *Leptothyris ignota* MUIR-WOOD, 1959, p. 308, by original designation.

### ***Leptothyrella incerta* (DAVIDSON, 1880) (Planche 39R-EE)**

- 1880. *Magasella incerta* DAVIDSON, p. 47.
- 1887. *Magasella incerta* DAVIDSON, Davidson, p. 101.
- 1891. *Platidia* (?) *incerta*, DAVIDSON, sp., Fischer & Ehlert, p. 128.
- 1983. *Phaneropora incerta* (DAVIDSON), Logan, p. 177.
- 1988. *Phaneropora incerta* (DAVIDSON), Logan, p. 67.
- 2003. *Phaneropora incerta* (DAVIDSON), Gaspard, p. 300 (with synonymy)
- 2005. *Phaneropora incerta* (DAVIDSON), Álvarez & ÉMIG, p. 166, 234.
- 2005. *Phaneropora incerta* (DAVIDSON), Álvarez *et al.*, p. 223 (with synonymy)
- 2006c. *Leptothyrella incerta* (DAVIDSON), MacKinnon & Lee, p. 2228.
- 2008. *Leptothyrella incerta* (DAVIDSON), Bitner, p. 444.
- 2015. *Leptothyrella incerta* (DAVIDSON), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 12.

**Material.** A ventral valve and a dorsal valve probably the counterpart of the preceding, fixed to a blue card introduced into a glass-tube (Planche 39S). In the reverse of the card it appears written by hand '1883, 22 août. 2995. *P. incerta*.' (Planche 39T). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00023 stick to it.

**Description.** Shell small, thin, nearly white, smooth except for weakly defined concentric growth lines, elongated, tear-like shaped (Planche 39U), gently biconvex with dorsal valve almost flat, anterior commissure rectimarginate (Planche 39Y-BB). Ventral valve subpentagonal to elongate oval in outline with greatest width anteriorly to midlength (Planche 39U). Beak in ventral valve pointed, high, nearly straight, beak ridges strong, pedicle aperture, large, hypothryid, deltidial plates very narrow, disjunct, pedicle collar short and sessile (Planche 39U-X). Hinge teeth small supported by short, thick, 'recessive' dental plates (Planche 39W-X). Dorsal valve subcircular, longer than wide (Planche 39Y). Internally, the dental sockets are short but widely open laterally, inner socket ridges strong, no cardinal process or inner hinge plates are present (Planche 39Y-EE). Crura very long, slender, flattened distally and anteromedially convergent, crural processes weakly developed (Planche 39Y, AA-CC, EE), septal pillar plate-like at its base with high, narrow distal extremity (axial loop phase) (Planche 39Y-EE). Descending loop branches extending between crura and distal extension of the high, septal pillar, ascending branches absent (Planche 39Y-EE). Typically, the adults of this species have a zygolophous lophophore (as it is reported also in species of *Platidia*), heavily spiculate. Unfortunately the lophophore is not preserved in the specimen studied. The shell, as in other terebratulides, is endopunctate (e.g., Planche 39W, EE).

**Remarks.** The valves of the lot described above, under the heading '**Material**', if not identical closely resemble those illustrated by Fischer & Cœhlert (1891, p. 128, fig 13a-c) as '*Platidia* (?) *incerta*, Davidson, sp.'. The Atlantic species *Magasella incerta* described by Davidson (1880, p. 47) that was initially included by Zezina (1981) in her new genus *Phaneropora* (see also Logan, 1983, p. 177, 1988a, p. 67; Gaspard, 2003, p. 300; Álvarez & Emig, 2005, p. 166; Álvarez *et al.*, 2005, p. 223) was transferred to *Leptothyrella* by MacKinnon & Lee (2006c, p. 2228) see also discussion in Bitner (2008, p. 444). To MacKinnon & Lee *Leptothyrella* is very similar to *Phaneropora* but lacking beak ridge tubercles and with narrow descending loop branches extending between crura and distal extension of high, septal pillar (descending branches completely absent in *Phaneropora* sps). In the present paper MacKinnon & Lee (2006c, p. 2228) are followed when including the species '*incerta*' in the genus *Leptothyrella*.

Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Platidia incerta*' written on it and 'Acores' as 'Localité' and '2995 m' as 'Prof.' (Planche 39R) without any label with registered number fixed in the reverse of it. From this card-board one glass-tube has been detached. This tube could be the loose glass tube with a dorsal valve and a ventral valve enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00023 fixed on it (Planche 39S). 'Au nord de Sao Miguel (Acores)' is among the localities listed by Fischer & Cœhlert (1891, p. 129). This corresponds to 'Station 3. *Talisman* 1833, Dragage 144.- 22 août.- Profondeur 2,295' Fischer & Cœhlert (1891, p. 129). In this page, the authors mentioned 2,295 m as depth of the dredging (Fischer & Cœhlert, 1891, p. 129) while for the same dredging they gave 2,995 m of depth in their description

of '*Cistella cistellula*' (Fischer & Ehlert, 1891, p. 131) (see also p. 121, 123 and 132 while describing '*Discinisca atlantica*', '*Neatretia gnomon*' and '*Eucalathis tuberata* and *E. ergastica*, respectively). This depth of 2,995 m is the one that was written in the card-board for '*Platidia incerta*' (Planche 39R), and in the back of the blue card (Planche 39T).

**Superfamily Terebratelloidea KING, 1850**

**Family Terebratellidae KING, 1850**

**Subfamily Terebratellinae KING, 1850**

**Genus *Terebratella* d'ORBIGNY, 1847**

**Type species:** *Terebratula chilensis* BRODERIP, 1833, p. 141, by original designation.

***Terebratella sanguinea* (LEACH, 1814)  
(Planche 40A-O)**

- 1814. *Terebratula sanguinea* LEACH, p. 76.
- 1817. *Anomia cruenta* DILLWYN, p. 295.
- 1860. *Terebratula (Terebratella) cruenta* (DILLWYN), Reeve, pl. 5.
- 1887. *Terebratella cruenta* (DILLWYN), Davidson, p. 87 (with synonymy)
- 1913. *Terebratella sanguinea* (LEACH), Suter, p. 1074.
- 1915. *Terebratella sanguinea* (LEACH), Thomson, p. 394.
- 1918. *Terebratella sanguinea* (LEACH), Thomson, p. 31.
- 1920. *Terebratella sanguinea* (LEACH), Dall, p. 370 (with synonymy)
- 1927. *Terebratella sanguinea* (LEACH), Thomson, p. 266, 293.
- 1949. *Terebratella sanguinea* (LEACH), Allan, p. 289.
- 1960. *Magasella sanguinea* (LEACH), Allan, p. 253.
- 1961. *Terebratella (Magasella) sanguinea* (LEACH), Rudwick, p. 475.
- 1974. *Terebratella sanguinea* (LEACH), Foster, p. 111 (with synonymy)
- 1980. *Terebratella (Magasella) sanguinea* (LEACH), Zezina, p. 23 (with synonymy)
- 1981. *Terebratella sanguinea* (LEACH), Campbell & Fleming, p. 154 (with synonymy)
- 1981. *Terebratella sanguinea* (LEACH), Richardson & Mineur, p. 163.
- 1981. *Terebratella sanguinea* (LEACH), Aldridge, p. 170.
- 1981b. *Terebratella sanguinea* (LEACH), Richardson, p. 193.
- 1981. *Terebratella sanguinea* (LEACH), Stewart, p. 202, 204.
- 1989. *Terebratella sanguinea haurakiensis* ALLAN, 1931, Foster, p. 292 (with synonymy)
- 1993. *Terebratella sanguinea* (LEACH), Cooper & Lee, p. 257-270 (with synonymy)
- 1994. *Magasella sanguinea* (LEACH), Richardson, p. 18.
- 2010. *Terebratella sanguinea* (LEACH), Emig, (<http://paleopolis.rediris.es/BrachNet.html>)
- 2015. *Magasella sanguinea* (LEACH), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 13.

**Material.** A dorsal valve and a ventral valve, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 40C-G). In the reverse of the card it appears written by hand '*Terebratella cruenta*' (Planche 40B). The glass-tube is glued to card-board with an old label with the name '*Terebratella cruenta* Dillwyn.; Localité Détroit de Foveaux, Nouvelle-Zélande' written on it (Planche 40A). A label with the registered number ML-ZOO-MAL-00037 is fixed in the reverse of the card-board.

A disarticulated and broken dorsal valve (Planche 40L-O) fixed, together with a ventral valve assigned here to *Neothyris lenticularis* (Deshayes) (Planche 40P-R) (see below), to a card-board with an old label with the name '*Terebratella*; Localité Iles Stewart ' written on it (Planche 40K). A label with the registered number ML-ZOO-MAL-00040 is fixed in the reverse of the card-board.

**Description.** Shell of medium size, ventribiconvex in lateral profile, transversely ovate to subpentagonal in outline, slightly unisulcate, costate, with fine growth lines of reddish orange colour (Planche 40F, J, L-N, O). Ventral beak suberect, attrite, beak ridges moderate, foramen large, mesothyrid, delthyrium with conjunct deltidial plates (Planche 40F-I). Teeth cyrtomatodont, moderately developed, dental plates absent (Planche 40I), pedicle collar short, sessile (Planche 40F-I), muscle impressions weak. Cardinalia weakly thickened, inner hinge plates moderately inclined meeting on low median septum to form septalium, inner socket ridges divergent overhanging the sockets; cardinal process with transversely oval myophore (Planche 40C-E, L-M), loop trabecular (broken) (Planche 40D-E), muscle impressions weak. The shell, as in other terebratulides, is endopunctate.

**Remarks.** *Anomia cruenta* DILLWYN, 1817 is considered here a junior synonym of *Terebratula sanguinea* LEACH, 1814 (see Allan, 1932, p. 22; Foster, 1974, p. 111; Emig, 2010a, <http://paleopolis.rediris.es/BrachNet.html>). So, the disarticulated valves of lot ML-ZOO-MAL-00037 is assigned to *Terebratella sanguinea* (LEACH, 1814).

In the lot ML-ZOO-MAL-00040 there is a dorsal valve of medium size, eroded and broken laterally, transversely ovate, slightly unisulcate, costate of reddish colour; cardinalia weakly thickened, inner hinge plates moderately inclined, meeting on low median septum to form septalium; cardinal process with very small and transversely oval myophore; loop not preserved (Planche 40L-O). This valve is here assigned to *Terebratella sanguinea* [see discussion on the differences between *T. inconspicua* and *T. sanguinea* in Richardson & Mineur (1981, p. 163)]. Together with this dorsal there is also a rather thick ventral valve of large size, eroded and broken anteriorly, externally with lamellose growth lines but without radial ornamentation, ventral umbo strongly incurved, not attrite, foramen small, mesothyrid, with delthyrium restricted by conjunct deltidial plates, teeth thick, muscle scars deeply impressed (Planche 40P-R). This ventral valve has been assigned to *Neothyris lenticularis* (DESHAYES, 1839) (see below). The absence of a dorsal valve makes assignment doubtful.

*Terebratella sanguinea*, together with *Neothyris lenticularis*, *Terebratella inconspicua*, and *Notosaria nigricans* are characteristic of the soft-bottom assemblages of Paterson Inlet, Stewart Island (Willan, 1981) origin of the valves of the lot ML-ZOO-MAL-00040.

Among the card-boards from which the glass-tubes have been detached there are four with an old label with the name '*Terebratella cruenta* (Dillwyn)' written on it and 'Iles Stewart' as 'Localité' (Planche 40S-V), without any label with registered number fixed in the reverse of it. '*Terebratella cruenta* (Dillwyn)' is described here as *Terebratella sanguinea* (LEACH, 1814). There is another card-board with an old label with the name '*Terebratella*' written on it and 'Iles Stewart' as 'Localité' (Planche 40Y) without any label with registered number fixed in the reverse of it. The specimen(s) of this lot probably were '*Terebratella cruenta* (Dillwyn)' or '*Calloria inconspicua* (SOWERBY, 1846)' (see below). Finally, there are two card-boards with the name '*Terebratella dorsata* Gmelin sp.' and 'Cap. Horn. Baie Elisa-Profondeur 33 m' (Planche 40W) or only 'Cap Horn' (Planche 40X) as localities. These two localities correspond with the Stations 28 ('Dragage 160. 1<sup>er</sup> juin 1883 - Baie Elisa. - Profondeur: 33 mètres. - Température: 7,5°C') and 32 ('Dragage 172. 30 juin 1883 - Au S. du Cap Horn. - Profondeur: 99 mètres. - Température: 6,9°C') listed by Fischer & Ehlert (1892b, p. 282-283) in their monograph describing the brachiopods recovered during the 'Mission scientifique du Cap Horn (1882-1883)' and from which they fully described and discussed the species of *Terebratella dorsata* (GMELIN, 1791). The glass tubes originally glued to these card-boards have been detached and no specimens remaining in the collection could be assigned confidently to *T. dorsata*.

*Terebratella sanguinea* (LEACH, 1814) mainly differs from the rather similar both externally and internally *Terebratella dorsata* (GMELIN, 1791) in its higher dorsal median septum which does not raise conspicuously at anterior end of dorsal valve as it happens in typical *T. dorsata*. As a result, the moderately inclined inner hinge plates meet dorsal median septum to form septalium high above valve floor in *T. sanguinea* and only slightly above in *T. dorsata*. Viewed laterally the shell of *T. dorsata* is moderately ventribiconvex to equally biconvex while the shell of *T. sanguinea* is ventri to strongly ventribiconvex. The external ornamentation is of moderately weak growth lines and coarse radial ornament in *T. sanguinea* and of moderate to strongly developed growth lines and weaker radial ornamentation in *T. dorsata*. Besides these morphological differences, the geographic distribution also differs, being *T. dorsata* rather abundant in the coast of southernmost South America and *T. sanguinea* in New Zealand (see Foster, 1974, p. 107, 111; Logan, 2007, p. 3110). The localities written in the old labels accompanying lots ML-ZOO-MAL-00037 and ML-ZOO-MAL-00040 (Planche 40A, K) are both in New Zealand, area of distribution of *T. sanguinea*.

The species name '*cruenta*' (*Anomia cruenta* DILLWYN, 1817) as '*Terebratula*' or '*Terebratella*' is not cited in recent literature. There are only references to Cooper's (1973a) species '*cruenta*' erected as *Frenulina cruenta* (Cooper, 1973a, p. 22). This laqueoid species characteristic of the Indian Ocean (see Cooper, 1973a, p. 22; Logan, 2007, p. 3102), clearly differs from the terebratelloid '*Anomia cruenta* Dillwyn' characteristic of the coasts of New Zealand, in being smooth, longitudinally subelliptical in outline, anterior commissure rectimarginate. *Frenulina cruenta* has 'a median and two lateral bands of elongate, red dashes or cuneiform-like markings, those of the median band tending to become solid red at the anterior' (Cooper, 1973a, p. 22) while the shells of '*Anomia cruenta* Dillwyn' are 'purple red or orange in colour, often in bands parallel to growth' (Foster, 1974, p. 113). Internally the dental plates are absent in the species from New Zealand while the 'teeth are buttressed by short, thick, receding dental plates separated from the valve wall by moderately deep cavities' (Cooper, 1973a, p. 22) in *Frenulina*

*cruenta*. The inner hinge plates are lacking from the Indian Ocean species while in '*Anomia cruenta* Dillwyn' are moderately inclined meeting dorsally to form septalium. Finally the loop in *Terebratella sanguinea* (LEACH, 1814) is trabecular being in *Frenulina cruenta* (COOPER, 1973) bilacular to incipiently bilateral.

### **Genus *Calloria* COOPER & LEE, 1993**

**Type species:** *Terebratula inconspicua* G. B. SOWERBY, 1846, p. 92, by original designation.

### ***Calloria inconspicua* (SOWERBY, 1846) (Planches 41A-UU; 42A-GG)**

1846. *Terebratula rubicunda* SOWERBY, p. 92.  
1846. *Terebratula inconspicua* SOWERBY, p. 93.  
1920. *Terebratella inconspicua* (SOWERBY), Dall, p. 371 (with synonymy)  
1974. *Terebratella inconspicua* (SOWERBY), Foster, p. 115 (with synonymy)  
1975b. *Waltonia inconspicua* (SOWERBY), Richardson, p. 200.  
1993. *Calloria inconspicua* (SOWERBY), Cooper & Lee, p. 266 (with synonymy)  
2006d. *Calloria inconspicua* (SOWERBY), MacKinnon & Lee, p. 2231.  
2015. *Calloria inconspicua* (SOWERBY), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 13

**Material.** Two articulated specimens loose and enclosed in a plastic bag, with a light green card-board (Planche 41A). The card-board has an old label with the name '*Terebratella rubicunda* Soland' written on it and 'Déroit de Foveaux, Nouvelle-Zélande' as 'Localité' (Planche 41A-B). It seems that besides these two articulated specimens, a glass-tube was originally glued to this card-board (Planche 41A), but none was included in the plastic bag. A label with the registered number ML-ZOO-MAL-00036 is fixed in the reverse of the card-board.

Besides the lot described above, there are other six in which the glass-tube(s) containing the specimens have been detached from the card-board to which they were originally glued. These are:

- A dorsal valve and a ventral, probably the counterpart of the preceding, loose in a glass-tube with a light blue card (Planche 41O). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00084 fixed on it.

- Two articulated specimens one loose and the other fixed to a light blue card introduced into a glass-tube (Planche 41T). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00095 fixed on it.

- Two articulated specimens and two disarticulated dorsal valves and two ventral, probably belonging to the same disarticulated specimens, loose in a glass-tube with a light blue card

(Planche 41BB). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00114 fixed on it.

- Three articulated specimens two loose and the other fixed to a light blue card introduced into a glass-tube (Planche 41LL). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00117 fixed on it.

- A dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 42A). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00119 fixed on it.

- A dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card introduced in a glass-tube (Planche 42O). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00136 fixed on it.

- A dorsal valve and a ventral, probably the counterpart of the preceding, and an articulated specimen. The ventral valve and the articulated specimens are loose, while the dorsal is still fixed to a brown card introduced in a glass-tube (Planche 42BB). In the reverse of the card nothing is written but inside the glass-tube there is also a piece of paper in which it is written by hand '*Terebratella rubicunda*. Sol Foveaux Strait, N.Z.' (Planche 42CC). The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-MAL-01296 fixed on it.

**Description.** Shell of red colour or variegated cream and red, sometimes in concentric bands parallel to growth (e.g., Planches 41C, U, GG, HH, KK, OO; 42EE-FF). Shell of small to medium size, smooth (with growth lines more or less lamellose, e.g., Planches 41C, U, W; 42EE-FF), or secondarily anteriorly costate (e.g., Planches 41L-M; 42DD), elongate oval to pentagonal in outline (e.g., Planches 41C, I, U, NN; 42EE), ventribiconvex (e.g., Planche 41K, EE), with anterior commissure unisulcate (Planche 41F, M, Z, KK, PP-RR). Ventral beak short, suberect, attrite, foramen large, submesothyrid; deltidial plates disjunct but conjunct in some (gerontic?) specimens (e.g., Planches 41C, H, I, P, U-W, CC, GG, NN, SS; 42L-M, P-S, GG). Ventral interior with very short and sessile pedicle collar, teeth cyrtomatodont, without dental plates (e.g., Planches 41P, V, SS; 42L-N, P-R, GG). Dorsal interior with short and wide cardinal process, with ventrally concave and transverse myophore lacking any anterior swelling (e.g., Planches 41R-S; 42B-J, T-AA, DD); inner socket ridges slightly divergent, overhanging the dental sockets (e.g., Planches 41S; 42B-G, I, T-V, DD); inner hinge plates meeting low median septum to form septalium (e.g., Planches 41R-S; 42C, F, DD), septum reaching midvalve (e.g., Planches 41R; 42B, E, V, DD); crura long and thin (e.g., Planches 41R-S; 42B-I, T-V, DD), long loop, trabecular, with lateral connecting bands extending between descending lamellae and median septum (Planches 41R-S, QQ-RR; 42B, D-I, T-AA, DD). The shell, as in other terebratulides, is endopunctate.

**Remarks.** Discussion on the generic status of '*Terebratula inconspicua* (SOWERBY, 1846)' and on the differences between '*T. inconspicua*', '*T. sanguinea*' and other related species has

been already provided by Cooper & Lee (1993; see also Foster, 1974, p. 97-117; Richardson & Mineur, 1981, p. 163; MacKinnon & Lee, 2006d, p. 2229, 2231) and below in the 'Remarks' for the Terebratulidae genus and species indeterminate.

### Genus *Neothyris* DOUVILLÉ, 1879

**Type species:** *Terebratula lenticularis* DESHAYES, 1839, p. 359, by original designation.

#### *Neothyris lenticularis* (DESHAYES, 1839) (Planche 40P-R)

- 1839. *Terebratula lenticularis* DESHAYES, p. 359.
- 1886. *Waldheimia lenticularis* (DESHAYES), Davidson, p. 52.
- 1913. *Magellania lenticularis* (DESHAYES), Suter, p. 1014.
- 1915. *Neothyris lenticularis* (DESHAYES), Thomson, p. 393.
- 1927. *Neothyris lenticularis* (DESHAYES), Thomson, p. 288.
- 1972. *Neothyris lenticularis lenticularis* (DESHAYES), Neall, p. 238.
- 1974. *Neothyris lenticularis* (DESHAYES), Foster, p. 145.
- 1975b. *Neothyris lenticularis* (DESHAYES), Richardson, p. 199.
- 1981a. *Neothyris lenticularis* (DESHAYES), Richardson, p. 137.
- 1981. *Neothyris lenticularis lenticularis* (DESHAYES), Campbell & Fleming, p. 154 (with synonymy)
- 1981. *Neothyris lenticularis* (DESHAYES), Chapman & Richardson, p. 157.
- 1981b. *Neothyris lenticularis* (DESHAYES), Richardson, p. 193.
- 1981. *Neothyris lenticularis* (DESHAYES), Stewart, p. 202.
- 1989. *Neothyris lenticularis* (DESHAYES), Foster, p. 298 (with synonymy)
- 2006d. *Neothyris lenticularis* (DESHAYES), MacKinnon & Lee, p. 2232.
- 2015. *Neothyris lenticularis* (DESHAYES), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 13.

**Material.** A disarticulated and broken ventral valve (Planche 40P-R) fixed, together with a dorsal valve we assigned here to *Terebratella sanguinea* (Planche 40L-O) (see above), to a card-board with an old label with the name '*Terebratella*; Localité Iles Stewart' written on (Planche 40K). A label with the registered number ML-ZOO-MAL-00040 is fixed in the reverse of the card-board.

**Description.** Valve of large size, smooth (externally with lamellose growth lines but without radial ornamentation), of pink colour, convex, seemingly (valve broken) ovate to subcircular in outline. Beak prominent, incurved, foramen small, mesothyrid, attrite, with delthyrium restricted by conjunct and concave deltidial plates (Planche 40P, R), posterior region including the interior of the beak is greatly thickened, hinge teeth large, robust, supported by swollen bases, dental plates absent, pedicle collar short, sessile, muscular impressions strong, situated posteriorly (Planche 40P, R). The shell, as in other terebratulides, is endopunctate (e.g., Planche



40R).

**Remarks.** In the lot ML-ZOO-MAL-00040, besides the dorsal valve here assigned to *Terebratella sanguinea* (LEACH, 1814) (Planche 40L-N), there is also a ventral valve (Planche 40O-P) here assigned to *Neothyris lenticularis* (DESHAYES, 1839) (see 'Remarks' for *T. sanguinea*, above). Nevertheless, the absence of a dorsal valve makes this assignment doubtful.

### Subfamily Anakineticinae RICHARDSON, 1991

#### Genus Anakinetica RICHARDSON, 1987

**Type species:** *Terebratella* (?) *cumingii* DAVIDSON, 1852, p. 78, by original designation.

#### *Anakinetica cumingii* (DAVIDSON, 1852) (Planche 43A-L)

1852b. *Terebratella* (?) *Cumingii* (*sic*) DAVIDSON, p. 78.

1852c. *Terebratella* (?) *Cumingii* (*sic*) DAVIDSON, p. 368.

1987. *Anakinetica cumingii* (DAVIDSON), Richardson, p. 38 (with long synonymy)

2006d. *Anakinetica cumingii* (DAVIDSON), MacKinnon & Lee, p. 2233.

2015. *Anakinetica cumingii* (DAVIDSON), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 12

**Material.** One articulated specimen, a light brown card (Planche 43A), and a piece of paper with the words '*Magasella cumingi* Dav. sp, Nouvelle Galles du Sud' (Planche 43B) introduced, with the remains of a completely broken glass-tube, in a plastic-bag with a label with the registered number ML-MAL-01286 fixed on it.

**Description.** Shell small, posteriorly thickened, longitudinally ovate (Planche 43C-D), biconvex, slightly ventribiconvex (Planche 43E-G, L), ventral beak large, suberect to nearly straight, with permesothyrid foramen (Planche 43C, E, H-K), deltidial plates fused in a wide and flat symphytium (Planche 43C, J, I); cardinal margin nearly straight (Planche 43C, H, J-K, I); the shell is smooth with only growth lines, unisulcate, ventrally carinate (Planche 43F-G, L). The shell, as in other terebratulides, is endopunctate (Planche 43J-L).

**Remarks.** Internally, this species characteristically have a thick cardinal platform with posterior pits for attachment of the dorsal adjustor muscles, the pedicle canal is long and narrow, the crura short and the loop annular to trabecular (see Richardson, 1987, p. 39, and references quoted therein). As the only specimen of the collection assigned here to *Anakinetica cumingii* is tightly articulated, the above characters could not be observed.

**Subfamily Magellaniinae BEECHER, 1893**

**Genus *Magellania* BAYLE, 1880**

**Type species:** *Terebratula australis* QUOY & GAIMARD, 1834, p. 551; by original designation;  
= 1819 *Terebratula flavescens* Lamarck, p. 246.

***Magellania flavescens* (LAMARCK, 1819)**

**(Planches 43M-II, 44A-Y, 45A-H)**

1819. *Terebratula flavescens* LAMARCK, p. 246.  
1853. *Waldheimia flavescens* (LAMARCK), Davidson, p. 64.  
1860. *Terebratula (Waldheimia) flavescens* (LAMARCK), Reeve, pl. 1.  
1861. *Terebratula (Waldheimia) flavescens* (LAMARCK), Reeve, pl. 2 (pars).  
1880. *Waldheimia flavescens* (LAMARCK), Davidson, p. 41 (with synonymy)  
1884. *Waldheimia flavescens* (LAMARCK), Davidson, p. 323, 331.  
1886. *Waldheimia flavescens* (LAMARCK), Davidson, p. 41.  
1887. *Magellania flavescens* (LAMARCK), Œhlert, p. 1317, figs 1108-1109.  
1887. *Magellania flavescens*, VALENCIENNES (*sic*), Œhlert, p. 1197, 1198, 1201, 1211, 1215,  
figs 911, 912A-B, 919A-B, 951A-B, 960A-B, pl. 15, fig. 4.  
1910. *Magellania flavescens* (LAMARCK), Verco, p. 96.  
1927. *Magellania flavescens* (LAMARCK), Thomson, p. 294.  
1974. *Magellania flavescens* (LAMARCK), Foster, p. 123 (with synonymy)  
1979. *Magellania flavescens* (LAMARCK), Richardson, p. 419.  
1994. *Magellania flavescens* (LAMARCK), Richardson, p. 22.  
2003. *Magellania flavescens* (LAMARCK), Gaspard, p. 265.  
2006d. *Magellania flavescens* (LAMARCK), MacKinnon & Lee, p. 2236.  
2015. *Magellania flavescens* (LAMARCK), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 12.

**Material.** Three articulated specimens fixed two by the ventral and the third by the dorsal valve (Planche 44B) to a card-board with an old label with the name '*Magellania flavescens* Lamarck; Localité Côtes d'Australie' written on it (Planche 44A-B). A label with the registered number ML-ZOO-MAL-00034 is fixed in the reverse of the card-board.

In a glass-tube there is an articulated specimen of big size fixed by the ventral valve to a card, and another small card with '*Magellania flavescens* Lmk sp; Australie' written on it (Planche 44Q). The glass-tube is glued to card-board with an old label with the name '*Magellania flavescens* Lamarck. Localité Australie' written on it (Planche 44P). A label with the registered number ML-ZOO-MAL-00035 is fixed in the reverse of the card-board.

A dorsal valve and a ventral, probably the counterpart of the preceding, loose in a round box (Planche 43M). Inside the box there is a label with the words '*Terebratula flavescens* (Australis.) Lam. (*Waldheimia*), Australia' written on it (Planche 43N). The round box is enclosed in a plastic-bag with a label with the registered number ML-MAL-01297 fixed on it.

A dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (Planche 45A). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00126 fixed on it.

**Description.** Shells of medium to large size, ovate to slightly subpentagonal, longer than wide, broadest about middle of the shell, smooth becoming costate anteriorly (Planches 43O-P, T, W-X, AA; 44B, G, I-O, R-S, V-Y, 45A), slightly unisulcate (Planche 44G, K-L, O, W-X), biconvex to ventribiconvex (Planches 43Q, T; 44E, H, K, U-V), with suberect to moderately incurved ventral beak, truncated by a large foramen, mesothyrid to permesothyrid; symphytium well developed (Planches 43O, S, U-V, X-Z; 44C-D, M-N, R-T; 45A, F-H), beak ridges weak to moderately defined (Planches 43U, Y; 44D, F, N, U-V). Hinge teeth cyrtomatodont, without dental plates; pedicle collar very short, sessile (Planches 43Q-S, U-V, X-Z; 44C-F, N, T; 45F-H). Cardinalia with narrow outer hinge plates and wide inner hinge plates meeting on medium septum to form a well developed septalium (Planches 43BB-II; 45A-E), transverse myophore on cardinal process (Planches 43BB-II; 45B-E), crura short, crural processes prominent (Planche 45B-E); loop broken, probably teloform (Planches 43BB-II; 45A-E). The shell, as in other terebratulides, is endopunctate.

**Remarks.** The morphological variability of the genera commonly included in the family Terebratellidae KING, 1850, their systematics, biogeography, evolution, origin and dispersal was fully described by Richardson (1994; see also references cited there).

***Magellania venosa* (SOLANDER, 1789)  
(Planches 15J-K, 45I-AA)**

1789. *Anomia venosa* SOLANDER, 1789.

1892b. *Magellania venosa* (SOLANDER), Fischer & Ehlert, p. 312 (with long synonymy) .

1994. *Magellania venosa* (SOLANDER), Richardson, p. 22.

2015. *Magellania venosa* (SOLANDER), Emig (*in Emig et al.*).

**Material.** Two articulated specimens fixed to a light blue card introduced into a glass-tube (Planche 45I). In the reverse of the card nothing is written. The glass-tube is not fixed to any card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00131 fixed on it.

A dorsal valve and a ventral valve, belonging to the same disarticulated specimen, fixed to a card introduced into a glass-tube (Planche 45R-AA; see also Planche 15J-K). In the reverse of the card it appears written by hand 'Dr 160 Baie Elisa' (Planche 45S). This tube together with other two glass-tubes (see above, under *Terebratulina septentrionalis*) are glued to card-board with an old label with the name '*Terebratulina septentrionalis* Couthouy, Localité Parages du Banc de Terre neuve' written on it (Planche 45R, see also Planche 15H). A label with the registered number ML-ZOO-MAL-00044 is fixed in the reverse of the card-board.

**Description.** Shell smooth with weakly developed and irregularly spaced growth lines and of white to pale yellow colour, medium to large size, ventribiconvex, outline subcircular to slightly elongate oval, maximum width about middle of the shell, anterior commissure rectimarginate to weakly unisulcate (Planche 45L, P, T-U, W, Z). The ventral beak is short, suberect, attrite, beak ridges sharp, foramen large, mesothyrid, delthyrium restricted by conjunct deltidial plates retaining only weak median line of junction (symphytium) (Planche 45O, U-W), pedicle collar short, sessile (Planche 45U-V), teeth cyrtomatodont, relatively strong, dental plates absent (Planche 45U-W). Cardinal process with transversely oval myophore, concave posteroventrally, inner hinge plates uniting with median septum forming well developed septalium, septum moderately high, reaching about half dorsal valve length, crura slender, broken, crural processes and loop not preserved (Planche 45Y-AA). The shell, as in other terebratulides, is endopunctate (e.g., Planche 45X-AA).

**Remarks.** The articulated specimens of the lot ML-ZOO-MAL-00131 fixed to a light blue card (Planche 45I, K-Q) are very similar, if not the same, to the specimens of *Magellania venosa* illustrated by Fischer & Cœhlert (1892b, pl. 12, figs. 16 and 17).

Although the glass-tube with the dorsal and a ventral valves figured here on Planche 45 (R-AA) was glued together with other two to a card-board (lot ML-ZOO-MAL-00044) with an old label with the name '*Terebratulina septentrionalis* Couthouy, Localité Parages du Banc de Terre neuve' written on it (Planche 45R, see also Planche 15H), the generic and specific assignation and the locality does not seem correct for this glass-tube in the top of the card-board. In fact, in the reverse of the card to which the valves were fixed it appears written by hand 'Dr 160 Baie Elisa' (Planche 45S). These data coincide with those provided by Fischer & Cœhlert (1892b, p. 318) for the 'Station 16. Dragage 160.- 1<sup>er</sup> juin 1883.- Baie Elisa.- Profondeur: 33 mètres.- Température: 7,5°c.', station from which specimens of *Magellania venosa* (SOLANDER, 1789) were recovered. As Fischer & Cœhlert (1892b, p. 319) wrote: 'les dragages de la *Romanche* prouvent combien ce Brachiopode - *Magellania venosa* - est abondant à la Terre-de-Feu et dans le détroit de Magellan' (see also the geographic distribution provided for this species by Logan 2007, p. 3110). The disarticulated valves illustrated now on Planche 45 (T-AA) closely resemble those illustrated by Fischer & Cœhlert (1892b, pl. 12, figs. 5, 7, 12-13). Even more, dorsal interiors as illustrated here (Planche 45W, Y-Z) and by Fischer & Cœhlert (1892b, pl. 12, figs. 6, 13) show similar disposed gonocoels. The locality and specific name of the old label seems to be correct for the specimens inside of the second and third tube in card-board [see above '**Remarks**' for *Terebratulina septentrionalis* (COUTHOUY, 1838) and Planche 15H-K]. The disarticulated dorsal and ventral valves of the lot ML-ZOO-MAL-00044 (Planche 45 T-AA) are smooth and of white colour, medium to large size, outline subcircular to slightly transversely oval, anterior commissure rectimarginate (Planche 45T-U, W, Y-Z). The ventral beak is short, suberect, attrite, beak ridges sharp, foramen large, with deltidial plates conjunct, pedicle collar short, dental plates absent (Planche 45U-W). Cardinal process with transversely oval myophore, inner hinge plates forming well developed septalium, crura long, slender (Planche 45Y-AA). All these are characteristics of specimens of *Magellania venosa* (SOLANDER, 1789) but as the loop is not preserved these disarticulated valves are here assigned to *Magellania venosa* but only doubtfully.

Finally, among the card-boards from which the tube/s have been detached there is one, and only one, with an old label with the name '*Magellania venosa* Solander', the 'Localité' 'Maxvell Cap. Horn.' and 'Prof. 24 m' written on it (Planche 45J). This could be the card-board to which the glass-tube (lot ML-ZOO-MAL-00131) was originally stuck. This information corresponds with that included by Fischer & Ehlert (1892b, p. 317) for the 'Station 4' 'Dragage 52.- 17 décembre.- Profondeur 24 mètres- Température 8°c.'

**Family Dallinidae BEECHER, 1893**

**Subfamily Dallininae BEECHER, 1893**

**Genus *Dallina* BEECHER, 1893**

**Type species:** *Terebratula septigera* LOVÉN, 1845, p. 29; by original designation.

(The date on the title page is 1846, but the book was already released in 1845; cf. Emig, 2014b).

***Dallina septigera* (LOVÉN, 1845)  
(Planches 46A-R, 47A-R, 48A-AA, 49A-N, 50A-L)**

- 1845. *Terebratula septigera* LOVÉN, p. 183.
- 1853. *Waldheimia septigera* (LOVÉN), Gray & Woodward, p. 59.
- 1855. *Waldheimia septigera* (LOVÉN), Davidson, p. 441.
- 1878. *Waldheimia septata* PHILIPPI, Sars, p. 11.
- 1878. *Terebratula septata* PHILIPPI, Jeffreys, p. 407 (pars)
- 1890a. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 120 (parts)
- 1891. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 64 (parts)
- 1892a. *Magellania septigera* (LOVÉN), Fischer & Ehlert, p. 19 (parts)
- 1893. *Dallina septigera* (LOVÉN), Beecher, p. 377.
- 1901. *Dallina septigera* (LOVÉN), Beecher, p. 297.
- 1920. *Dallina septigera* (LOVÉN), Dall, p. 357 (pars) (with synonymy)
- 1927. *Dallina septigera* (LOVÉN), Thomson, p. 235, 252 (pars)
- 1960a. *Dallina septigera* (LOVÉN), Atkins, p. 86.
- 1960b. *Dallina septigera* (LOVÉN), Atkins, p. 94.
- 1979. *Dallina septigera* (LOVÉN), Brunton & Curry, p. 55.
- 1981b. *Dallina septigera* (LOVÉN), Cooper, p. 23 (with synonymy)
- 1994. *Dallina septigera* (LOVÉN), Anadón, p. 74.
- 1998. *Dallina septigera* (LOVÉN), Logan, p. 558.
- 2003. *Dallina septigera* (LOVÉN), Gaspard, p. 297 (with synonymy)
- 2004. *Dallina septigera* (LOVÉN), Logan, Bianchi, Morri and Zibrowius, p. 167.
- 2005. *Dallina septigera* (LOVÉN), Álvarez & Emig, p. 171, 224 (with synonymy)
- 2006d. *Dallina septigera* (LOVÉN), MacKinnon & Lee, p. 2242.
- 2006. *Dallina septigera* (LOVÉN), Zezina, p. 71.

2015. *Dallina septigera* (LOVÉN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 14.

**Material.** A glass-tube with a broken dorsal valve, the umbonal area of another two dorsal valves and two broken ventral valves fixed to a card (Planche 46B). In the reverse of the card it is written by hand: '*Septigera*. Cap. Bogador.' (*sic*) (Planche 46C). The glass-tube is glued to a card-board with an old label with the name '*Dallina septigera* Lovén sp.; Localité Cap. Bojador; Prof 640-782' written on it (Planche 46A). A label with the registered number ML-ZOO-MAL-00003 is fixed in the reverse of the card-board.

In a second glass-tube there is a disarticulated specimen fixed to a card (Planche 46J). In the reverse of the card it is written by hand: '*M. septigera*. Oc. Atlantique, Cap. Bogador. (*sic*)' (Planche 46K). The glass-tube is glued to a card-board with an old label with the name '*Dallina septigera* Lovén; Localité Cap. Bogador' written on it (Planche 46I). A label with the registered number ML-ZOO-MAL-00004 is fixed in the reverse of the card-board.

In a third glass-tube there is a disarticulated specimen fixed to a card (Planche 47C). In the reverse of the card it is written by hand: '*M. septigera*; Cap. Bogador; 640-782. (*sic*)' (Planche 47B). The glass-tube is glued to a card-board with an old label with the name '*Dallina septigera* Lovén sp.; Localité Cap. Bojador; Prof. 640-782' written on it (Planche 47A). A label with the registered number ML-ZOO-MAL-00005 is fixed in the reverse of the card-board. Both valves are dyed with pale blue ink.

In a fourth glass-tube there is a disarticulated specimen fixed to a card (Planche 47I). The glass-tube is glued to card-board with an old label with the name '*Dallina septigera* Lovén sp.; Localité Cap. Bojador; Prof. 640-782' written on it (Planche 47H). A label with the registered number ML-ZOO-MAL-00007 is fixed in the reverse of the card-board.

Besides the lots described above, there are other four in which the glass-tube(s) containing the specimens have been detached from the card-board to which they were originally glued. These are:

- A disarticulated and broken ventral valve and a dorsal, probably belonging to the same disarticulated specimen, fixed to a light blue card introduced into a glass-tube (Planche 50A). In the reverse of the card nothing is written. The glass-tube is enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00068 fixed on it.

- A disarticulated dorsal valve fixed to a light blue card introduced with a loose ventral, probably belonging to the same disarticulated specimen, in a glass-tube (Planche 48A). In the reverse of the card nothing is written. The glass-tube is enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00072 fixed on it.

- Two articulated specimens fixed, one by its dorsal valve and the other by the ventral, to a light brown card introduced into a glass-tube (Planche 48I). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of paper in which it is written by hand '*Talisman* 83, 9 Juillet, Dr. 72 = 882 m, -73 = 1056.1439. Sahan' (*sic*), and in a more recent writing, also by pencil '*Dallina septigera*' (Planche 48R). The glass-tube is not fixed to a card-

board but enclosed in a plastic-bag with a label with the registered number ML-MAL-01281 stick to it.

- An articulated specimen fixed by its ventral valve, to a light brown card introduced into a glass-tube (Planche 48S). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of paper in which it is written by hand '*Dallina septigera* Lovén sp Golfe de Gascogne' (Planche 48AA). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed together with a card-board with an old label on which nothing is written, in a plastic-bag with a label with the registered number ML-MAL-01295 stick to it.

- Two articulated specimens, one anteriorly broken, loose together with a light brown card inside a glass-tube (Planche 49A-B). In the reverse of the card nothing is written but in the glass-tube there is a folded piece of paper in which it is written by hand '*Talisman* 83, 8 Juillet, Dr. 62. 640 782, Cap Bogador. / 9 Juillet Dr. 71. 640, Sahara' (Planche 49C). The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-MAL-01277 stick to it.

**Description.** Shell of medium to large size, elongate triangular to subpentagonal in outline, broadest anteriorly (Planches 46J; 47C-E, I, M; 48A-C, F, I-K, T; 49D-E); anterior commissure rectimarginate to slightly parasulcate (Planches 46M-N, Q-R; 47E; 48G-H, N, P, U-V; 49G); biconvex to ventribiconvex in lateral profile (Planches 48L-N, P-Q, X-Z; 49F-H); smooth; ventral beak prominent, erect to slightly curved, without beak ridges; foramen medium to large, round, attrite, permesothyrid, symphytium concave with raised median ridge (Planches 46F-G, J, L; 47D-F, J-K; 48B, J, T; 49D, F, H-J; 50C-E). Hinge teeth cyrtomatodont, small, weak, without dental plates; pedicle collar very short, sessile (Planches 46F-G, L; 47D-F, J-L; 48D, V-W; 49D, I-J). Cardinalia with well developed septalium; with excavate inner and outer hinge plates separated by narrow crural bases; inner hinge plates converging on median septum, forming septalium (Planches 46D-E, O-R; 47M-N, P-R; 49K, N); cardinal process not differentiated, the diductor muscles attach dorsally to a small and rounded depression with a small elevation on each side (Planches 46D, O-Q; 49N); median septum thin, rather high posteriorly (Planches 46P-R; 47G; 49K, M-N) but low anteriorly, extending beyond midvalve (Planches 46D, O-R; 47G, M-R; 50H, J-K, I); adult loop teloform (Planches 47G, M-O; 48N-P, V-W), muscular impressions poorly marked, the mantle canal system highlighted with black ink (Planche 46J, P-R). The shell, as in other terebratulides, is endopunctate.

**Remarks.** Only those specimens of the C hlert collection lacking dental plates and with loop entirely free from the septum (e.g., Fischer & C hlert, 1891, pl. 4, fig 9x-z) are kept here as *Dallina septigera* (Lov n). See discussion in the '**Remarks**' for *Fallax dalliniformis* ATKINS, 1960 above. Accordingly, the specimens of the lots ML-ZOO-MAL-00006 and 00008 although fixed to a card with an old label with the name '*Dallina septigera* Lov n; Localit  Cap. Bojador; Prof 640' and '*Dallina septigera* Lov n sp.; Localit  Cap. Bojador; Prof 640-782' respectively are here assigned to *Fallax dalliniformis* ATKINS (see above).

The dorsal valve illustrated in Planche 47M-R and the ventral of Planche 47I-K, both from the lot ML-ZOO-MAL-00007, are rather similar to those illustrated by Fischer & C hlert (1891, pl.

4, fig. 9x-z and 9v, respectively). Loop and cardinalio look quite the same. In addition, the valves illustrated in Planche 46J-R (lot ML-ZOO-MAL-00004) with the mantle canal system highlighted with black ink, resemble those illustrated by Fischer & Cœhlert (1891, pl. 5, fig. 9af-ad). Following what it is written in the old labels (Planches 46A, C, I, K; 47A-B, H) and in Fischer & Cœhlert (1891, p. 67), the specimens illustrated in Planches 46 and 47 (lots ML-ZOO-MAL-00003, ML-ZOO-MAL-00004, ML-ZOO-MAL-00005, ML-ZOO-MAL-00007) probably came from dredges 65 and/or 66 done with *Le Talisman* the eight of July 1883 in the Bojador Cape at 782 and/or 640m.

Inside the glass-tube containing the two articulated specimens of lot ML-MAL-01281 (Planche 48I-R) there is also a folded piece of paper in which it is written by hand '*Talisman* 83, 9 Juillet, Dr. 72 = 882 m, -73 = 1056.1439. Sahara', and in a more recent writing, also by pencil '*Dallina septigera*' (Planche 48R). In Fischer & Cœhlert, 1891 (p. 66-67) are listed the stations in which they recovered '*Magellania septigera*, Lovén, sp.'. Among them there are four dredged with *Le Talisman*, the '9 juillet 1883'. These are the numbers 73 (station 12; profondeur 698 m.), 74 (station 13; profondeur 640 m.), 75 (station 14; profondeur 882 m.) and 76 (station 15; profondeur 1036-1435 m.). The first station dredged in the 'Côtes du Soudan' and the last three in 'Soudan' without further precision. So, with the data written in the folded piece of paper that accompanies the specimens it seems reasonable to think that they were recovered in the 'Côtes du Soudan'.

With the articulated specimen of lot ML-MAL-01295 there is a folded piece of paper in which it is written by hand '*Dallina septigera* Lovén sp Golfe de Gascogne' (Planche 48AA). In the list of stations provided by Fischer & Cœhlert, 1891 (p. 66-67) in which '*Magellania septigera*, Lovén, sp.' was recovered there are three done with *Le Travailleur* in the 'Golfe de Gascogne'; these are: station 2 ('dragage 42, 16 août 1881, profondeur 896 m'), station 3 ('dragage 2, 6 juillet 1882, profondeur 608 m') and station 4 ('dragage 3, 6 juillet 1882, profondeur 521 m'). The articulated specimen of this lot (ML-MAL-01295) with all probability was recovered from one of these three stations.

The specimens of the two last lots (ML-MAL-01281 and ML-MAL-01295), are articulated and the lophophore dried and in place, this makes difficult to check in these three specimens if they have or not dental plates and if the loop is entirely free or not from the dorsal median septum. So, these specimens are assigned here to *Dallina septigera*, but only tentatively. Future studies with the specimens disarticulated and free for organic remains may clarify if they have or not dental plates and if the loop is connected with the septum. If it is revealed that they have dental plates and the adult loop supported by crura and the septum they should be reassigned to its homeomorphic species *Fallax dalliniformis* ATKINS.

The two articulated specimens of the lot ML-MAL-01277 (Planche 49A-B) seem to have being dredged, as written in the accompanying piece of paper, with *Le Talisman*, dredgins 62 and 71 done 'le 8 et 9 Juillet 1883' at a depths of '640 et 782' in 'Cap Bogador' (*sic*) and 'Sahara' respectively. Dredgins 62 and 71 were not listed by Fischer & Cœhlert, 1891 (p. 66-67) with those in which '*Magellania septigera*, Lovén, sp.' was recovered although there are two done with *Le Travailleur* in 'Cap Bojador' in the 8 of July 1883. These stations are: station 10 ('dragage 65, 8 juillet 1883, profondeur 782 m Cap Bojador') and station 11 ('dragage 66, 8 juillet 1883,



profondeur 640 m Cap Bojador'). The shape and size of the dorsal median septum and the muscle arrangement seen in the anteriorly broken shell of this lot (Planche 49K-N) closely resemble those of the 'coupe schématique' of '*Magellania septigera*, Lovén, sp.' illustrated by Fischer & Cehlert, 1891 in plate 5 figure 9ah (figure caption in p. 137).

The ventral umbonal area of a broken ventral valve of the lot ML-ZOO-MAL-00003, illustrated in Planche 46F-G is rather similar to that of the specimen of '*Magellania septigera*, Lovén' illustrated by Fischer & Cehlert (1891, pl. 5, fig 9ae).

Finally, it should be noted that the disarticulated and slightly broken dorsal valve of the lot ML-ZOO-MAL-00068 has a septalium and a median septum similar to those of *Dallina septigera* (Planche 50H). The ventral beak of the disarticulated an broken ventral valve of this lot is prominent, erect to slightly curved, without beak ridges; and the foramen medium to large, round, permesothyrid, and the symphytium concave (Planche 50B-F). The pedicle collar is very short and sessile (Planche 50C-E). The hinge teeth are small, cyrtomatodont and without dental plates (plates present in *Fallax dalliniformis*) (Planche 50C-E). All these are characteristics of specimens of *Dallina septigera*. But as the valves are broken, the loop is not preserved and there is no information accompanying the lot, these disarticulated valves are here assigned to *Dallina septigera* but only doubtfully. The loop is not preserved either in the disarticulated dorsal valve of the lot ML-ZOO-MAL-00072 (Planche 48A) so, in this paper this lot is only tentatively assigned to *Dallina septigera* (Lovén).

***Dallina floridana* (POURTALÈS, 1867)**  
**(Planche 50M-V)**

- 1867. *Waldheimia floridana* POURSALÈS, p. 127.
- 1871. *Waldheimia floridana* POURSALÈS, Dall, p. 12 (with synonymy)
- 1886. *Waldheimia floridana* POURSALÈS, Davidson, p. 59 (with synonymy)
- 1893. *Dallina floridana* (POURTALÈS), Beecher, p. 382.
- 1920. *Dallina floridana* (POURTALÈS), Dall, p. 358 (with synonymy)
- 1927. *Waldheimia floridana* (POURTALÈS), Thomson, p. 253.
- 1977. *Dallina floridana* (POURTALÈS), Cooper, p. 128 (with synonymy)
- 2015 . *Dallina floridana* (POURTALÈS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 14

**Material.** A glass-tube with an articulated specimen fixed to a glass slide (Planche 50O). The glass-tube is glued to card-board with an old label from the 'MUSEUM DE LAVAL' with the name '*Waldheimia floridana* Pourtales; Mexique' written on it (Planche 50M). Two labels, one with the registered number ML-ZOO-MAL-00048 and a second with the text: '*Waldheimia floridensis*. Pourtales. United States deep sea dredging expedition off the Coast of Mexico, 1869' are fixed in the reverse of the card-board (Planche 50N).

**Description.** Shell of medium size, triangular in outline, maximum width near the front (Planche 50O); anterior commissure parasulcate (Planche 50Q-R, U), ventribiconvex in lateral

profile (Planche 50T), smooth, ventral beak low, incurved, without beak ridges; deltidial plates conjunct forming a concave symphytium; foramen medium size, round, slightly attrite, meso to permesothyrid (Planche 50O-P, S, V). Hinge teeth cyrtomatodont, small, without dental plates; pedicle collar very short, sessile. Cardinalia with well-developed septalium; inner and outer hinge plates well developed, crural bases narrow but well differentiated; cardinal process not differentiated; median septum high posteriorly, low anteriorly, extending beyond midvalve; loop thin, delicate, teloform (Planche 50R, U). The shell, as in other terebratulides, is endopunctate.

**Remarks.** *Dallina floridana*, which commonly occurs with *Tichosina cubensis* (Pourtalès) in the Gulf of Mexico, Straits of Florida and Caribbean regions, is easily recognized because of 'its strongly triangular outline, pale yellow colour, and wide anterior which has a fold within the sulcus' (cf. Cooper, 1977, p. 128).

*D. floridana*, as *Magellania floridana*, is compared with *D. septigera* by Fischer & Ehlert, 1891 (p. 70) but not described or illustrated. As stated in the label (Planche 50N), this specimen does not come from the *Le Travailleur*, *Le Talisman*, *Hirondelle* or *La Romanche* expeditions (Fischer & Ehlert, 1890a-b; 1891; 1892a-b) but from the 'United States deep sea dredging expedition off the Coast of Mexico, 1869'.

**Terebratellidae genus and species indeterminate**  
**(Planches 51A-O; 52A-S; 53A-U; 54A-S; 55A-CC; 56A-Y; 57A-SS)**

**Material.** Six lots in which the glass-tubes containing the specimens had been detached from the card-board to which they were originally glued. These are:

- Four disarticulated dorsal valves and the four ventral counterparts fixed to a light blue card introduced into a glass-tube (Planches 51A-O, 52A-S). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00089 fixed on it.

- Three disarticulated specimens fixed to a light blue card introduced into a glass-tube (Planches 53A-U; 54A-S). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00090 fixed on it.

- Eight articulated specimens and a light blue card loose in a glass-tube (Planche 55A-R). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-MAL-01284 fixed on it. In the plastic-bag there is also a card-board to which the glass-tube was originally glued. Fixed to the card-board there is an old label with 'Iles Stewart' as locality and only information.

- A dorsal valve and a broken and only partially preserved ventral valve, probably belonging to the same disarticulated specimen, fixed to a light blue card (Planche 55S-CC). In the reverse of

the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00098 fixed on it.

- Two disarticulated dorsal valves and the two ventral counterparts fixed to a light blue card introduced into a glass-tube (Planche 56A-Y). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00101 fixed on it.

- Six disarticulated dorsal valves and the six ventral counterparts plus another disarticulated ventral valve fixed to a light blue card. In the bottom of this card there is another card of small size and black colour with other four disarticulated dorsal valves and the four ventral counterparts plus two articulated specimens fixed to it (Planche 57A-SS). In the reverse of the card nothing is written. The card with the specimens is in a glass-tube that is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00122 fixed on it.

**Remarks.** Although it is difficult to conclude because they are all juveniles with a loop at the bilacunar or haptoid stage or earlier, overall, the individuals illustrated in Planches 51-57 could be identified as either *Calloria* (very likely *inconspicua*) or *Terebratella* (very likely *sanguinea*). According to Cooper & Lee (1993), the two genera are distinguished by the size, smoothness of the shell and beak characters. Since the size and beak characters change through ontogeny (so, they are indistinguishable at early stages), the only useful character to distinguish them at these growth stages should be the smoothness of the shell. *Calloria* has a smooth shell at least in the juvenile stages, and *Terebratella* is costate from very young. Applying this simple scheme, the shells illustrated in Planches 51-57 could be diagnosed to either of the two genera (or even species), with the samples illustrated in Planches 55 and 57 being probably mixed with two species.

It should be also mentioned that the specimen illustrated in Planche 53D seems to have some structures (swellings) buttressing the teeth. They may be just appearances caused by shadings (what is more likely). It is difficult to be sure in this case if there are dental plates or not as in this valve, the wide central cavity, the pedicle chamber, is rather deep, so, its 'lateral walls' resemble thick dental plates without lateral cavities. If they are real dental plates, then this specimen may not be identified even as a terebratellid. In addition, the loop seen in the accompanying dorsal valve (Planches 53E-N) is more advanced than in the specimen of a comparable shell size illustrated in Planche 53T, but this kind of variations in the speed of loop development is also observed in laqueids.

Finally, and as juveniles are difficult to identify as stated above, and given that they may not necessarily have been originated from New Zealand (except for the sample illustrated in Planche 55A, which is definitely from NZ, 'Iles Stewart'), the specimens of these six lots are here assigned to Terebratellidae genus and species indeterminate. The comments included in this '**Remarks**' have greatly benefited by discussion with Yoshi Endo (written communication November 2014). His suggestions are very much appreciated.

**Superfamily Kraussinoidea DALL, 1870**

**Family Kraussinidae DALL, 1870**

**Subfamily Terebratellinae KING, 1850**

**Genus *Kraussina* DAVIDSON in SUESS, 1859**

**Type species:** *Anomia rubra* PALLAS, 1776, p. 182, by subsequent designation of Davidson (1853, p. 69), for *Kraussia* DAVIDSON 1852, but renamed in 1859.

***Kraussina rubra* (PALLAS, 1776)**

**(Planche 58A-FF)**

1776. *Anomia rubra* PALLAS, p. 182.  
1861. *Terebratula (Kraussia) rubra* (PALLAS), Reeve, pl. 9 (pars).  
1887. *Kraussina rubra* (PALLAS), Davidson, p. 119 (with synonymy)  
1920. *Kraussina rubra* (PALLAS), Dall, p. 374 (with synonymy)  
1952. *Kraussina rubra* (PALLAS), Jackson, p. 22  
1973b. *Kraussina rubra* (PALLAS), Cooper, p. 23 (with synonymy)  
1986. *Kraussina rubra* (PALLAS), Hiller, p. 129.  
1990. *Kraussina rubra* (PALLAS), Brunton & Hiller, p. 324 (with synonymy)  
2008. *Kraussina rubra* (PALLAS), Hiller, MacKinnon & Nielsen, figs 6a-g, 7a-c.  
2015. *Kraussina rubra* (PALLAS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 9.

**Material.** A dorsal valve and a ventral, probably belonging to the same disarticulated specimen, loose in a glass-tube with a light green card (Planche 58A). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00079 fixed on it.

Another dorsal valve and a ventral, probably belonging to the same disarticulated specimen, loose in a glass-tube with a glass slide and a black card (Planche 58K-L). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00085 fixed on it.

Other dorsal valve and a ventral, probably belonging to the same disarticulated specimen, loose in a glass-tube with a light green card (Planche 58T). In the reverse of the card nothing is written. The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00130 fixed on it.

**Description.** Shells of medium to large size [W = 12 (Planche 58A) to 23 mm (Planche 58T)], ventribiconvex (e.g., Planche 58F, I, Y), rounded to transversely oval (Planche 58A, L, T), hinge line broad nearly straight (e.g., Planche 58B, U-V), anterior commissure rectimarginate to very gently unisulcate (Planche 58J, Y, AA). Ornament of concentric growth lines and rounded ribs which may increase by branching or intercalation but not varying greatly in size (e.g., Planche 58U-BB). Colour yellowish red, more intense mainly on the radiating ribs and at the growth

lines (e.g., Planche 58V, X). The ventral beak is suberect, strongly attrite, and truncated by a large, incomplete, submesothyridid foramen, marginated anteriorly by the umbo of the dorsal valve and by two very narrow (disjunct) deltidial plates (Planche 58G-I, Q, W, BB). The palintrope is triangular, bounded by the foramen and beak ridges (Planche 58G, Q, W, BB). Internally the ventral valve have small teeth, without dental plates, the pedicle collar is very short and sessile (Planche 58G-J, Q, W, AA-BB). Dorsal valve interior has widely divergent socket ridges bounding narrow sockets; the inner socket ridges are prominent and widely divergent, enclosing a pair of large, thickened, dorsal pedicle adjustor scars (Planche 58B, M, O, S, U). A small, low, short and wide cardinal process is situated between the posterior ends of socket ridges. This cardinal process is reduced by abrasion in large specimens (Planche 58B, M, O, S, U). The nothyrial platform consists of a pair of suboval thickenings between the socket ridges and the posterior end of the median septum; rounded depressions on the platform mark the sites of attachment of pedicle muscles (e.g., Planche 58M, S). Hinge plates, crura and descending lamellae not developed (Planche 58B, M, O, S, U). A low median septum extends anteriorly from the nothyrial platform to the septal pillar (e.g., Planche 58B, M, O, U). Brachidium consisting of bifurcate septal pillar from the distal tips of which slender, curved and ventromedially directed processes extend but do not unite to form a ring (Planche 58B-F, M-O, U). The shell, as in other terebratulides is endopunctate.

**Remarks.** As Brunton & Hiller (1990, p. 324; see also Hiller, 1991, p. 444; Logan, 2007, p. 3114; Hiller *et al.*, 2008, p. 380) stated, *Kraussina*, as presently known, is strongly endemic to seas around southern Africa (Namibia to Moçambique). Among the card-boards from which the glass-tubes have been detached there are three with an old label with the name '*Kraussina rubra* Pallas sp.' written on it and 'Sud de l'Afrique' as 'Localité' (Planche 58CC-EE) without any label with registered number fixed in the reverse of it. Probably, these were the card-boards to which the detached glass-tubes of the lots ML-ZOO-MAL-00079, ML-ZOO-MAL-00085 AND ML-ZOO-MAL-00130 described above under the heading '**Material**' were originally glued. On Planche 58FF there is another card-board with an old label fixed to it with the generic name '*Kraussina*' written on it but the locality 'Port Jackson, Australia' which is too far for the, at present, recognized geographic distribution of this genus (Brunton & Hiller, 1990, p. 324; Logan, 2007, p. 3114). The disarticulated specimen of the lot ML-ZOO-MAL-00031, whose glass-tube is glued to card-board with an old label with the name '*Kraussina (Megerlina) Davidsoni* Vil.; S. Paul' written on it, is described below as *Megerlina davidsoni* (VÉLAIN, 1877).

### **Genus *Megerlia* KING, 1850**

**Type species:** *Anomia truncata* LINNAEUS, 1767, p. 1,152, by original designation.

#### ***Megerlia truncata* (LINNAEUS, 1767)**

**(Planches 59A-Z, 60A-AA, 61A-DD, 62A-AA, 63A-KK, 64A-V, 65A-Q, 66A-EE, 67A-BB, 68A-AA)**

1767. *Anomia truncata* LINNAEUS, p. 1152.

1788. *Terebratula truncata* (LINNAEUS), Retzius, p. 14.

1795. *Criopoderma truncatum* (LINNAEUS), Poli, p. 255.

1833. *Terebratula monstrosa* SCACCHI, p. 17.
1850. *Megerlia truncata* (LINNAEUS), King, p. 145.
1869. *Megerlea (Anomia) truncata* (LINNAEUS), Davidson, p. 375.
1880. *Megerlea truncata* (LINNAEUS), Davidson, p. 50 (with synonymy)
1884. *Megerlea truncata* (LINNAEUS), Davidson, p. 341.
1887. *Mühlfeldtia truncata* (LINNAEUS), Cehlert, p. 1322, fig. 1119, pl. 15, fig. 9.
1887. *Megerlia truncata* (LINNAEUS), Davidson, p. 103 (with synonymy)
- 1890a. *Mühlfeldtia truncata* (LINNAEUS), Fisher & Cehlert, p. 120.
- 1890b. *Mühlfeldtia echinata* FISCHER & CÉHLERT, p. 73.
1891. *Mühlfeldtia truncata* (LINNAEUS), Fisher & Cehlert, p. 80.
1891. *Mühlfeldtia monstrosa* (SCACCHI), Fisher & Cehlert, p. 87.
1891. *Mühlfeldtia echinata* FISCHER & CÉHLERT, p. 90.
- 1892a. *Mühlfeldtia truncata* (LINNAEUS), Fischer & Cehlert, p. 20 (with synonymy)
1920. *Mühlfeldtia disculus* (PALLAS), Dall, p. 1766 (non Pallas, 1766)
1921. *Mühlfeldtia truncata* (LINNAEUS), Jackson, p. 42.
1927. *Mühlfeldtia truncata* (LINNAEUS), Thomson, p. 220, 226 (with synonymy)
1979. *Megerlia truncata* (LINNAEUS), Brunton & Curry, p. 52 (with synonymy)
1979. *Megerlia echinata* (FISCHER & CÉHLERT), Brunton & Curry, p. 54 (with synonymy)
1979. *Megerlia truncata* (LINNAEUS), Logan, p. 68 (with synonymy)
1985. *Megerlea truncata* (LINNAEUS), Revert, p. 75.
1986. *Megerlia truncata* (LINNAEUS), Templado & Luque, p. 113.
1989. *Megerlia truncata* (LINNAEUS), Brunton, p. 162 (with synonymy)
1994. *Megerlia truncata* (LINNAEUS), Anadón, p. 69 (with synonymy)
2003. *Megerlia truncata* (LINNAEUS), Logan, p. 7.
2005. *Megerlia truncata* (LINNAEUS), Álvarez & Emig, p. 167, 223 (with synonymy)
2005. *Megerlia monstrosa* (SCACCHI), Álvarez & Emig, p. 168, 223 (with synonymy)
2006. *Megerlia truncata* (LINNAEUS), Lee & MacKinnon, p. 2246.
2006. *Megerlia truncata* (LINNAEUS), Zezina, p. 72.
2007. *Megerlia truncata* (LINNAEUS), Bitner, p. 496 (with synonymy)
2015. *Megerlia truncata* (LINNAEUS), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 9.

**Material.** A glass-tube with two specimens, one articulated and the other disarticulated, both fixed to a card (Planche 59B). The glass-tube is glued to a card-board with an old label from the 'MUSEUM DE LAVAL' with the name '*Megerlia truncata* Scacchi; Méditerranée; Ac 1883' written on it (Planche 59A). A label with the registered number ML-ZOO-MAL-00028 is fixed in the reverse of the card-board.

In a second glass-tube there are five articulated specimens, four very small and one of medium size, fixed to a card (Planche 59T). The glass-tube is glued to card-board with an old label with the name '*Mühlfeldtia truncata* Linné; Localité La Galite (Tunis). Prof. 111' written on it (Planche 59S). A label with the registered number ML-ZOO-MAL-00033 is fixed in the reverse of the card-board.

Besides the lots described above, there are other twenty in which the glass-tube(s) containing the specimens have been detached from the card-board to which they were originally glued. These are:

- A dorsal valve and a ventral, probably belonging to the same specimen, fixed to a blue card introduced into a glass-tube (Planche 60E). In the reverse of the card it is written by hand '*Talisman*. 15 Juin Drag. 23. Prof. 120. Cap Blanc' (Planche 60F). These data correspond with those provided by Fischer & C hlert (1891, p. 83) for station 9, one of the stations from which '*M hlfeldtia truncata*' was recovered. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00018 stick to it.

- Three disarticulated dorsal valves and three ventral, probably the counterparts of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 61A). In the reverse of the card it appears written by hand '*Talisman*. Drag 23. Prof 120. Cap Blanc' (Planche 61B). This information corresponds with that included by Fischer & C hlert (1891, p. 83) for the 'Station 9' '*Talisman*, 1883. Dragage 23. - 15 juin. - Profondeur 120 m. Cap Blanc (Maroc)'. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00019 stick to it.

- Five disarticulated dorsal valves and three ventral, fixed to a light brown card introduced into a glass-tube (Planche 61K). In the reverse of the card nothing is written, but in a second card, loose in the glass-tube it is written by hand '*M hlfeldtia truncata* Linn  sp Cap Blanc 120' (Planche 61J). The glass-tube and the card-board to which probably was originally glued, are enclosed in a plastic-bag. The card-board has an old label with the name '*M hlfeldtia truncata* Linn  sp' written on it and 'Cap Blanc 120 m' as 'Localit ' (Planche 61H-I). It seems that two glass-tubes were originally glued to this card-board, but only one was included in the plastic bag. A label with the registered number ML-ZOO-MAL-00021 is fixed in the reverse of the card-board. The data in the reverse of the card and those of the old label fixed in the card-board agree with those provided by Fischer & C hlert (1891, p. 83) for the stations 9 and 10 of the '*Talisman* 15 Juin 1883, dragages 23-24' from which *M. truncata* was recovered.

- A dorsal valve and a ventral, probably belonging to the same disarticulated specimen, fixed to a light blue card introduced into a glass-tube (Planche 61T). In the reverse of the card it appears written by hand '*Talisman*. 9 Juillet. Drag 71. Prof 640. Loc Sahara' with black ink and 'g. de valve  pineuse' by pencil (Planche 61U). The glass-tube is not fixed to a card-board but enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00052 fixed on it. Fischer & C hlert (1891, p. 83, 91) did not list a 'Dragage 71' but 'dragages 73 et 74' done also the 9th of July 1883 at depths of 698 m and 640 m respectively, both in the 'C tes du Soudan'. These dredgings correspond to 'stations 3-4' from which '*M hlfeldtia echinata*' was recovered.

- Two articulated specimens fixed to a light blue card introduced together with a loose third specimen in a glass-tube (Planche 60T). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00067 stick to it.

- Four disarticulated dorsal valves and three ventral, fixed to a light blue card introduced into a broken glass-tube (Planche 62A). In the reverse of the card nothing is written. The completely broken glass-tube and the card with the specimens are enclosed in a plastic-bag with a label with the registered number ML-ZOO-MAL-00069 fixed on it.
- Three articulated specimens and a ventral valve fixed to a light blue card introduced into a glass-tube (Planche 63A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00073 stick to it.
- A dorsal valve and a ventral, probably belonging to the same specimen, and another dorsal valve and a ventral completely open but still slightly joined posteriorly and fixed to a blue card introduced into a glass-tube (Planche 64A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00075 stick to it.
- Four articulated specimens fixed to a light blue card introduced into a glass-tube (Planche 63N). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00076 stick to it.
- Two articulated specimens fixed to a light blue card introduced into a glass-tube (Planche 65A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00080 stick to it.
- Five disarticulated dorsal valves and a ventral loose in a glass-tube (Planche 62U). In the interior of the glass-tube there is also a light blue card from which the valves seem to have been detached. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00092 stick to it.
- Two articulated specimens, three disarticulated dorsal valves and three ventral (probably belonging to three disarticulated specimens) loose in a glass-tube (Planche 66A). In the interior of the glass-tube there is also a blue card from which the valves seem to have been detached. In the reverse of the card it appears written by hand 'Cap Blanc.' (Planche 66B). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00107 stick to it. 'Cap Blanc (Maroc)' is the locality where the 'dragages 23-24' were done by the '*Talisman*' the 15th of July 1883 at a depth of 120 m (Fischer & Ehlert, 1891, p. 83).
- A dorsal valve and a ventral, probably belonging to the same disarticulated specimen, plus another disarticulated dorsal valve fixed to a light blue card introduced into a glass-tube (Planche 66T). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00113 stick to it.



- Two articulated specimens and a disarticulated ventral valve fixed to a blue card introduced, together with two loose dorsal valves and a ventral, in a glass-tube (Planche 67A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00125 stick to it.

- Two articulated specimens, three disarticulated dorsal valves and one ventral fixed to a light blue card introduced into a glass-tube (Planche 67O). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00127 stick to it.

- Four articulated specimens completely open and fixed to a light blue card introduced into a glass-tube (Planche 68A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00138 stick to it.

- Three articulated specimens fixed to a light blue card introduced into a glass-tube (Planche 68G). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00139 stick to it.

- A dorsal valve and a fragmented ventral, belonging to the same specimen completely open but still slightly joined posteriorly and fixed to a blue card introduced into a glass-tube (Planche 60M-O). In the reverse of the card it appears written by hand '*Me. echinata* (nobis) 'Tn. *Talisman*' (Planche 60P). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic box with registered number ML-ZOO-MAL-00001 and the name '*Mühlfeldtia echinata* (Cap Bojador)' both written by hand (Planche 60P) and stick to it (Planche 60M). The two first stations listed by Fischer & Cehlert (1891, p. 91) and from which '*M. echinata*' was recovered, were done with *Le Talisman*, the 8th of July of 1883 in the 'Cap. Bojador' at depths of 782 m and 640 m respectively. The lot ML-ZOO-MAL-00001 was probably recovered from one of the two dragages (65 or 66) done in these stations.

- An articulated specimen fixed by its dorsal valve to a light brown card introduced into a glass-tube (Planche 60Q). In the reverse of the card nothing is written but inside the glass-tube there is also a piece of paper in which it is written by hand '*Mühlfeldtia echinata* Fisch et Cehl Cap Bojador 640-782' (Planche 60S). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-MAL-01283 stick to it, and in a plastic box without any other reference. This lot seems to have been recovered in one of the first two dragages listed by Fischer & Cehlert (1891, p. 91) (see comment above).

- Two dorsal valves and two ventral, probably the counterparts of the preceding, fixed to a light brown card introduced into a glass-tube. Loose in the tube there are also two articulated specimens (Planche 63Z-DD and EE-II) and a dorsal valve and a ventral, probably belonging to the same specimen (Planche 63W, Z, EE). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now

enclosed in a plastic bag with registered number ML-MAL-01293 stick to it, and in a plastic box without any other reference.

- As written above, in the lot ML-ZOO-MAL-00029, together with the twenty articulated *Lacazella* specimens there is also an articulated and small *Megerlia* (Planche 5K).

**Description.** Shells of small to medium size, wider than long, transversely oval in outline (e.g., Planche 59C); ventribiconvex to concavoconvex in lateral profile (e.g., Planches 60X-Z; 63DD, II; 66M), anterior commissure slightly unisulcate (Planches 59E, M, R; 60C, Z; 63B, Q-V, BB, GG; 66H, L, DD), capillate or costellate, striae slightly nodulose (e.g., Planches 59U-W; 60R, U, W; 63D, I, Z; 65M-Q; 67Q; 68I-K), hinge line broad, nearly straight (Planches 59D, H, M, O; 60O, V, X; 61C-E, L-S, V-Z; 62I, S, Y, AA; 63Y; 66C-F, O, R-S, CC; 67H-I, R, T, V), cardinal areas on both valves, that on the dorsal valve being very small (e.g., Planches 59D, G, H, AA; 60X; 63C, G, J, P, CC, HH; 66K, N-O; 67D); ventral beak suberect, attrite to strongly attrite, subtruncate, usually abraded; foramen large, submesothyrid to amphithyrid; deltidial plates disjunct (Planches 59D, G-H, AA; 60B, X; 61G, R-S, V-W; 63C, P, CC, HH; 64P-Q; 65B-D; 66K, N-O; 67B-D). Valve interiors radially tuberculate (Planches 59O; 61E, L; 62I-J, S-T, X-Y; 63X-Y; 64E-F; 66C-E, R-S); ventral valve with short and sessile pedicle collar (Planches 59H; 61R-S, V-W; 62B-C, O-P; 63L, X, 64P-Q; 65B, D-E; 66N, O, R; 67B-C), hinge teeth without dental plates, widely separated (Planches 59J-N; 60C, L, O; 61D, G, R-S, V-W; 62B-C, O-P; 63L-M, Q-T, X; 64J, P-R, T; 65G, K-L; 66E-F, H, R; 67B-C, E-F, AA-BB; 68B-F). Cardinal process small, inconspicuous; crural bases attached to inner sides of widely divergent inner socket ridges that are large and merge with outer hinge plates (Planches 59O-Q; 60K; 61C-E, M-P, Y-X; 62D-F, H-N, S-T, X-Y, AA; 63Y; 64F, I; 66CC; 67H-N, T-W); loop bifurcate with distal extensions forming complete ring, descending branches extending from cardinalia to ring (Planches 59I-M, O-R, 60C-D, K; 61E-F, X-AA; 62D-F, H-N, S-T, Y; 63S, JJ-KK; 64F, I, L; 66H, S, AA-EE; 67E-N, T-X); mantle moderately to strongly spiculate (Planche 59J-K; 60O; 62V; 66U-V). Remains of the complete and dried plectolophous lophophore, could be seen seemingly in place (Planches 60O, AA; 63E; 64K-N; 65G-I, Q; 66V-BB; 67S, Z; 68B-F). The shell, as in other terebratulides, is endopunctate (e.g., Planches 60G; 62S; 64V; 65P-Q; 68B-F).

**Remarks.** *Megerlia truncata* is very variable in dorsal outline and in ornament, from a transverse subrectangular form with angular cardinal edges and clear radial ornament (e.g., Planche 59C) to a subcircular form with rounded cardinal edges and concentric lamellae obscuring the radial ornament (e.g., Planche 60A-B) (see Davidson, 1887, pl. 19, figs 11-12; and remarks in Fisher & Ehlert, 1891, p. 86 and Thomson, 1927, p. 228). Different stages in the development of the loop of *Megerlia truncata* were described and illustrated by Fischer & Ehlert (1891, p. 87 and pl. 7; see also Eudes-Deslongchamps, 1884b; Davidson, 1887, p. 106 and fig. 9; Ehlert, 1887, p. 1322; Thomson, 1927, p. 220, 227 and figs 66, 69) and are illustrated here in Planche 59J-M, O-R (see also Planches 60C-D, G-K; 61C,E-F, L-P, X-DD; 62D-F, H-N, S-T, X-Y, AA; 63Q-V, Y-KK; 64B-I, L; 66C-D, H, S, AA-EE; 67E-F, H-N, T-X). The median septum, loop and radially tuberculate interior of the two dorsal valves on the upper row (Planche 66A) of the lot ML-ZOO-MAL-00107 somehow resemble those of *Megerlina davidsoni* (see below).

The specimen illustrated in Planche 59C-M resembles that illustrated by Fischer & Ehlert (1891, pl. 7, fig. 11a-c). The dorsal valves illustrated in Planches 59O-R and 67H-K resemble that illustrated by Fischer & Ehlert (1891, pl. 7, fig. 11g). The loop of the dorsal valve in Planche

60G-J resembles that illustrated by Fischer & Cœhlert (1891, pl. 7, fig. 11u) although the valve outline is closer to that illustrated in Planche 62S. Following what it is written in the old label (Planche 59A) and in Fischer & Cœhlert (1891, p. 83), the specimens illustrated in Planche 59B-R (lot ML-ZOO-MAL-00028) probably came from station 3, dredge 9 done with *Le Talisman* the sixth of July 1883 in the Mediterranean (no more precision is given) at 445 m. The origin of the specimens illustrated in Planches 59T-Z, 60A-D (lot ML-ZOO-MAL-00033) seems to be 'La Galite (Tunis), prof. 111 m'. This locality was not listed by Fischer & Cœhlert (1891, p. 83) among the stations dredged by *Le Travailleur* (1880-1882) and *Le Talisman* (1883).

The two ventral valves of the lot ML-MAL-01293 on the left side of the bottom row on Planche 63W, slightly resemble that illustrated by Fischer & Cœhlert, 1891 (pl. 7, fig. 11e). No information is included with the glass-tubes containing this lot. The articulated specimen of the lot ML-MAL-01293, illustrated in Planche 63Z-DD is rather similar to that illustrated by Fischer & Cœhlert, 1891 (pl.7, fig. 11l-o). The dorsal valves with preserved lophophore illustrated in Planches 62W and 67R-S (of the lots ML-ZOOL-MAL-00095 and ML-ZOO-MAL-00127 respectively) slightly resemble that illustrated by Fischer & Cœhlert, 1891 (pl. 7, fig. 11k). The third articulated specimen (of the lot ML-ZOO-MAL-00076) illustrated in Planche 63N is rather similar to that illustrated by Fischer & Cœhlert, 1891 (pl. 7, fig. 11p-s). The specimens illustrated by Fischer & Cœhlert, 1891 (pl. 7, fig. 11a-s) were assigned by them to '*Mühlfeldtia truncata* Lin.'.

Among the card-boards from which the glass-tubes have been detached there are ten with an old label with the name '*Mühlfeldtia truncata* Linné sp.' written on it (Planche 68L-U) and of them, four with 'Cap. Blanc' (Prof. 120 m) as 'Localité' (Planche 68L-O), three with 'Méditerranée' (Planche 68P-R), one with 'Golfe du Lion' (Prof. 555 m) (Planche 68T), one with 'Martigns. Méditerranée' (Planche 68S) and the last one with 'Golfe de Gascogne' as 'Localité' (Planche 68U) without any label with registered number fixed in the reverse of them. These data correspond with those of the stations 2 (*Le Travailleur* 1881, Dragage 1, 4 juillet), 3 (*Le Travailleur* 1881, Dragage 9, 6 juillet), 4 (*Le Travailleur* 1882, Dragage 8, 12 juillet) and 5 (*Le Travailleur* 1882, Dragage 12, 13 juillet) listed by Fischer & Cœhlert (1891, p. 83, see also p. 88). In the 'Golfe de Gascogne' two stations, 53 and 60, done in 1886 with the *Hirondelle* were listed by Fischer & Cœhlert (1892a, p. 20).

There are other four card-boards with an old label with the name '*Mühlfeldtia echinata* Fisch. et Oehl.' written on it (Planche 68V-Y) and of them, two with 'Cap. Bojador' as 'Localité' (Planche 68V-W) and the other two with 'Côtes du Soudan' (Planche 68X-Y) without any label with registered number fixed in the reverse of them. These data correspond with those of the stations 1, 2, 3 and 4 *Talisman* 1883, dragages 65, 66, 73 and 74 (8-9 July) listed by Fischer & Cœhlert (1891, p. 91).

The tubes containing the (four) lots ML-ZOO-MAL-00018, -00019, -00021 and -00107 probably were detached from the four card-boards illustrated in Planche 68L-O. Those containing the lots ML-ZOO-MAL-00001 and ML-MAL-01293 probably were detached from the two card-boards illustrated in Planche 68V-W with '*Mühlfeldtia echinata* Fisch. et Cœh.' and 'Cap. Bojador' written on their labels.

Of the remaining 13 lots of which the glass-tube(s) containing the specimens have been detached, there is no information of name, year or locality. So, the assignments should be considered only tentative.

‘The validity of the species of *Megerlia* has been a matter of debate for some considerable time’ (Hiller *et al.*, 2008, p. 381; see also Atkins, 1961a, b; Álvarez & Emig, 2005, p. 169 and references therein). Some authors even included the species ‘*Terebratula monstrosa* Scacchi’, a possible ecologically variant of ‘*Mühlfeldtia truncata* Linné’, in a separate genus, *Pantellaria* (e.g. Cooper, 1981a, b; Zezina, 2000). Hiller *et al.* also wrote that ‘it is beyond the scope of the present paper to sort out this disagreement, which will probably require molecular techniques’ and although agreeing with this, and till this information is made available, the species ‘*Mühlfeldtia truncata* Linné.’, ‘*Mühlfeldtia echinata* Fisch. et Oeh.’ and ‘*Terebratula monstrosa* Scacchi’ are described here as *Megerlia truncata* (LINNAEUS, 1767). ‘*Mühlfeldtia sanguinea* Chemnitz’ (*sic*) name written on the old labels (Planche 68Z-AA) of two of the card-boards from which the glass-tubes have been detached, is rejected as non-binomial as happens with the names first published in volumes 1 to 11 of Martini & von Chemnitz (Newes systematisches Conchylien-Cabinet, Nürnberg, 1769-1795). The valid name for this species is *Frenulina sanguinolenta* (GMELIN, 1791) because it was the first binominal valid name given to this species [see Dall, 1920, p. 336, and synonymies and description in Davidson (1880, p. 52; 1887, p. 108 as ‘*Megerlia sanguinea*, Chemn.’)].

#### **Genus *Megerlina* EUDES-DESLONGCHAMPS, 1884**

**Type species:** *Kraussia lamarckiana* DAVIDSON, 1852, p. 80; by original designation.

#### ***Megerlina davidsoni* (VÉLAIN, 1877)**

**(Planches 69A-EE, 70A-T, 71A-S, 72A-V, 73A-T, 74A-Z, 75A-NN, 76A-NN, 77A-YY, 78A-SS, 79A-LLL)**

1877. *Kraussia davidsoni* VÉLAIN, p. 139.  
1884a. *Megerlina davidsoni* (VÉLAIN), Eudes-Deslongchamps, p. 160.  
1887. *Kraussia Davidsoni*, VÉLAIN, C̄hlert, p. 1202, fig. 924  
1887. *Kraussia (Megerlina) davidsoni* (VÉLAIN), Davidson, p. 126.  
1927. *Kraussia davidsoni* VÉLAIN, Thomson, p. 226.  
1980. *Megerlina davidsoni* (VÉLAIN), Zezina, p. 22 (with synonymy)  
1981a. *Megerlina davidsoni* (VÉLAIN), Cooper, p. 25 (with synonymy)  
2015. *Megerlina davidsoni* (VÉLAIN), Emig, Álvarez & Bitner, WoRMS Taxon List, p. 9.

**Material.** A glass-tube with a disarticulated specimen fixed to a card (Planche 69B). The glass-tube is glued to card-board with an old label with the name ‘*Kraussia (Megerlina) Davidsoni* Vil.; S. Paul’ written on it (Planche 69A). A label with the registered number ML-ZOO-MAL-00031 is fixed in the reverse of the card-board.

Besides the lot described above, there are other seven in which the glass-tube(s) containing the specimens have been detached from the card-board to which they were originally glued. These are:

- A dorsal valve and a ventral, probably belonging to the same specimen, fixed to a light blue card introduced into a glass-tube (Planche 69H). In the reverse of the card it appears written by hand 'S: Paul. *Kraus. davidsoni*' (Planche 69I). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00024 stick to it. Among the card-boards from which the glass-tubes have been detached there is one with an old label with the name '*Kraussina Davidsoni* Vélain and 'S. Paul' as 'Localité' (Planche 69J) and another with the same locality but without any species name or label with registered number fixed in the reverse of it (Planche 69K). From any of these card-boards a glass-tube could have been detached. The lot ML-ZOO-MAL-00024 probably was originally glued to the first of these two card-boards (Planche 69J).

- A dorsal valve and a ventral, probably belonging to the same disarticulated specimen, fixed to a light blue card introduced into a glass-tube (Planche 69P). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00057 stick to it.

- Two dorsal valves and two ventral, probably the counterparts of the preceding, plus other three ventral valves all fixed to a light blue card introduced into a glass-tube (Planche 72A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00071 stick to it.

- Two articulated specimens fixed to a light blue card introduced into a glass-tube (Planche 73A). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00074 stick to it.

- Five dorsal valves and three articulated specimens fixed a light blue card introduced into a glass-tube (Planche 69BB). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00097 stick to it.

- Twenty eight articulated specimens, and a dorsal valve and a ventral, probably the counterparts of the preceding, loose in a glass-tube (Planches 74A). In the interior of the glass-tube there is also a light blue card from which the valves seem to have been detached. In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00121 stick to it.

- A dorsal valve and a ventral, probably the counterparts of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 69U). In the reverse of the card nothing is written. The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed in a plastic bag with registered number ML-ZOO-MAL-00129 stick to it.

**Description.** Shell small, slightly wider than long, costellate to finely costellate (e.g., Planches 69W; 70A-D, Q-T; 71F-I, S; 72U; 74B-E, H-I, R-Y; 75A-B, E-I, M-N, V-AA, DD, GG-HH; 76A-B, O-P, EE-FF; 77A-B, L-M, R-S,U, Y-AA, EE, GG-HH, RR-YY; 78A-P, V, X-Y, GG-HH, JJ, LL, NN -PP; 79A-B, H, J-K, Q-S, Y-Z, FF, II-KK, VV-WW), subpentagonal in outline and ventribiconvex in lateral profile and with the anterior commissure unisulcate (e.g., Planches 69B-C, F, P, U, BB; 72A; 73A; 74A). Ventral beak suberect, attrite, with large, triangular pedicle opening, and deltidial plates widely disjunct (Planches 69F-G, V; 70T; 71G-H, P; 72H, T-V; 73E, I, M-O, T; 74B, D, G, H, T-U; 75A, D, H, J, L-M, O, V, Y-AA, GG, JJ, MM-NN; 76A, E, K-L, O, Q-R, EE, GG, JJ-LL; 77A, C-D, L, O, R, V, Y, CC, FF, GG, II-KK; 78H, L-M, O, Q, W-X, Z, EE, GG, QQ; 79A, D, R, U, X, Y, AA, JJ, MM, UU-YY ). The interior of both valves, especially that of the dorsal valve, is radially tuberculate (e.g., Planches 69C-F, L, Q, X-Z, CC-DD; 70E, J, M-N; 71A-D, J-M; 72B-C, I, K-L, O, R; 73K; 74O, Z; 75CC, LL; 76G-H, M-N, W-CC, II, MM; 77F-H, W, BB, PP; 78DD, LL-NN, 79CCC). The teeth relatively thick are not supported by dental plates (Planches 69F-G, V; 71P; 72T-V; 74F; 75EE-FF; 78MM). The pedicle collar short and sessile (Planches 69F-G; 70T;71P; 72H, T-V; 73I, M, T; 74B, H; 75A, M, V, Z, JJ, MM-NN; 76R; 77A, FF; 78H, M, O, W-X, EE, QQ). The muscle scars are slightly impressed (e.g., Planches 69F; 71P; 72H, T-V). The cardinal process is small, weak, the inner socket ridges are prominent and widely divergent, defining deep sockets, and the crura not developed (Planches 69C-E, CC-EE; 70E-K, M-N; 71A-E, J-M, 72B-C, G, I, K-S; 74J). The descending lamellae of the loop extending posteriorly from lateral flanks of bifurcate septal pillar, as curved flanges which do not reach the cardinalia (Planches 69C-D, Y-AA, CC-EE; 70E-N; 71A-E, J-O, 72B-G, I-S; 73L; 74J; 75R-U, BB-FF; 77F-K; 78U, LL-NN, RR-SS). The septal pillar tapers posteriorly as a low but thick median septum (Planches 69C-D, CC-EE; 70E-N; 71A-E, J-O, 72B-C, E-G, I-O, R-S). Remains of the internal epithelia and dried lophophore, could be seen seemingly in place (Planches 69Y-AA; 73P-R; 75R-U, LL; 76J, Z-AA; 77W, NN; 78N BB, DD; 79F, HH, BBB-EEE). The shell, as in other terebratulides, is endopunctate (e.g., Planches 70C-D, Q-R; 73I-J, R-S; 74B-H; 76BB; 77X; 78V, FF; 79H, Q).

**Remarks.** This small brachiopod that lives in the coasts of the volcanic crater that is St. Paul Island in the Indian Ocean (lots ML-ZOO-MAL-00024, ML-ZOO-MAL-00031, Planche 69A-K; see geographic distribution in Hiller *et al.*, 2008, p. 381; Logan, 2007, p. 3114), was well described originally by Vélain (1877, p. 139) and later by Davidson (1887, p. 126), Eudes-Deslongchamps (1884b, p. 161), and Cooper (1981a, p. 25). Of the remaining six lots of which the glass-tube(s) containing the specimens have been detached, there is no information of name, year or locality. So, the specific and even generic assignments, as it happened with the specimens of previous lots, should be considered only tentative. In fact, the specimens studied from the collection are very variable in dorsal outline, ornament and even in their internal characters (see Planches 69-79). Those specimens with costellate to finely costellate ornamentation and internally with valve interiors radially tuberculate, weak cardinal process, without crura and the descending lamellae extending posteriorly from lateral flanks of bifurcate septal pillar as curved flanges that do not reach the cardinalia, the septal pillar tapers posteriorly as low, thick median septum, have been assigned to *Megerlina davidsoni* (VÉLAIN, 1877). In specimens assigned to *Kraussina rubra* (PALLAS, 1776), the shell is multicostate with relatively strong (at least in comparison with those developed in *Megerlia* and *Megerlina* species) costa, internally the widely divergent socket ridges enclosing a pair of large, thickened, dorsal pedicle adjustor scars and the brachidium consisting of bifurcate septal pillar from distal tips of which slender,

curved and ventromedially directed processes, extend but not unite to form a ring. Finely, specimens with very fine ribs (capillate), without cardinal process and with descending branches of loop extending from cardinalia to a ring supported dorsally by the median septum are here assigned to *Megerlia truncata* (LINNAEUS, 1767).

Many of the 28 articulated and relatively well preserved specimens of the lot ML-ZOO-MAL-00121 have bryozoans encrusting their surfaces, being the widely distributed, runner-like ascophoran cheilostome, *Hippothoa divaricata* the most abundant (Paul Taylor written communication, 20 March 2014). *Hippothoa* colonies are frequent in the ventral valves (e.g., Planches 76P, DD, V-Z; 79B, I, KK, SS, TT), but are present also in some dorsal (e.g., Planches 76EE, NN; 77GG, QQ). In the anterior end of the shallow dorsal sulcus of the specimen of the left side of the second row (see Planche 74A) a bryozoan zooid (protocorallite) settled and grew towards the anterior commissure of the brachiopod (Planche 76EE, NN). Epizoan ecology and brachiopod-epizoan interactions in fossil brachiopods were discussed by Álvarez & Taylor (1987, p. 17-31; see also Brunton & Hiller, 1990, p. 320). Shell growth, abrasion and epizoans indicate crowded living conditions for specimens of at least this lot.

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## Specimens in the Collections of Marquis de Monterosato and Frédéric Cailliaud housed in the Musée des Sciences, Laval

by Fernando Álvarez

A total of 187 brachiopods (45 articulated, two dorsal and four ventral valves in the Monterosato Collection and 13 articulated, three dorsal and three ventral valves in the Cailliaud Collection) have been studied, photographically illustrated, and briefly commented. The supraespecific classification and synonymy list for each species are not repeated here as it is clearly stated in the contribution above dealing with the Recent brachiopods in the Ehlert Collection.

*Repository.* All studied specimens from the Collections of Marquis de Monterosato and F. Cailliaud are housed in the 'Musée des Sciences, Laval'. Specimens are registered by a five digit number with the prefix ML-ZOO-MAL (Musée Laval-Zoologie-Malacologie).

### A) Specimens in the Collection of Marquis de Monterosato

#### *Lacazella mediterranea* (RISSO, 1826) (Planche 80A-F)

**Material.** A ventral valve (Planche 80E-F) is loose inside a glass-tube glued to a card-board with an old label with the name '*Thecidium mediterraneum*. Philippeville. Monterosato' written on it (Planche 80A). In the interior of the glass-tube there is also a blue card from which the valve seems to have been detached (Planche 80B). In the reverse of the card the words '9. *Thecidium mediterraneum*, Risso. Philippeville. Monterosato 1884' are written by hand (see Planche 80C). In the glass-tube there is also a folded piece of paper with the words '*Thecidium mediterraneum* Philippeville.' written on it (Planche 80D). A label with the registered number ML-ZOO-MAL-00885 is fixed in the reverse of the card-board. The glass-tube and the card-board are now enclosed in a plastic bag with a new label with the name '*Thecidium*' written on it by hand and with red ink.

**Remarks.** This small disarticulated ventral valve of pale brown colour and with irregular lamellae has a well developed interarea, with convex and well differentiated pseudodeltidium, the hinge line is straight and slightly smaller than the maximum width, which is near midvalve, the anterior commissure is slightly uniplicate, the valve wall is endopunctate and the interior is tuberculate, with two small plates within the umbo (hemispondylium) supported by a short median septum and two relatively well developed hinge teeth (Planche 80E-F). All these characters are typical of the Mediterranean thecideidine *Lacazella mediterranea* (RISSO, 1826). Unfortunately, the dorsal valve counterpart of the preceding, showing the complex brachidium, with brachial lobes interdigitating with ramuli, characteristic of *L. mediterranea*, is not preserved. As shown in the old label (Planche 80A), in the reverse of the card (Planche 80C) and in the folded piece of paper inside the glass-tube (Planche 80D) the ventral valve come from 'Philippeville', the actual Skikda, city in the north eastern Algeria, a port in the Gulf of

Stora in the Mediterranean Sea. This locality is within the distribution range presently accepted for *Lacazella mediterranea*, species that inhabits crevices within coralligène especially in the continental shelf off Algeria and Tunisia.

***Gryphus vitreus* (BORN, 1778)  
(Planche 80G-U)**

**Material.** A slightly broken ventral valve loose inside a glass-tube (Planche 80H). Inside the tube there is also a folded piece of paper with the name '*Terebratula vitrea* Corse' written by hand (Planche 80J) and a light blue card to which the ventral valve could have been originally attached. In the reverse of the card it is written by hand '1. *Terebratula vitrea* Born Corse. Monterosato 1884' (Planche 80I). This glass-tube that has been detached from the card-board to which it was originally glued (Planche 80G), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Terebratula vitrea*. Born Corse. Monterosato.' written on it (Planche 80G). Another label with the registered number ML-ZOO-MAL-01269 is fixed in the reverse of the card-board.

- Two loose articulated specimens with a light blue card to which it seems the articulated specimens were originally attached, inside a glass-tube (Planche 80L). In the reverse of the card it is written by hand '1. *Terebratula vitrea* Born var.; Sardaigne. Monterosato' (Planche 80M). Inside The glass-tube there is also a folded piece of paper with the name '*Terebratula vitrea* var. Sardaigne' written by hand (Planche 80N). This glass-tube that has been detached from the card-board to which it was originally glued, is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Terebratula vitrea*. Born Sardaigne. Monterosato.' written on it (Planche 80K). Another label with the registered number ML-ZOO-MAL-01270 is fixed in the reverse of the card-board.

- Three articulated specimens and a ventral and a dorsal valves probably belonging to the same disarticulated specimen, fixed to a light blue card, introduced into a glass-tube (Planche 80R-S). In the reverse of the card it is written by hand '1bis *Terebratula affinis*, Cale. = *T. vitrea* var. *minor*. Lipari (Méditerranée) Monterosato 1884' (Planche 80T). Inside The glass-tube there is also a folded piece of paper with the name '*Terebratula affinis* = *minor*. Lipari' written by hand (Planche 80U). This glass-tube that has been detached from the card-board to which it was originally glued, is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Terebratula affinis*. Lipari. Monterosato.' written on it. Another label with the registered number ML-ZOO-MAL-01271 is fixed in the reverse of the card-board.

The small plastic bags containing each of the above three lots are enclosed in a bigger bag with a label with the name '*Terebratula*' written by hand with red ink.

**Remarks.** Some of the '*Terebratula*' species/varieties described in the Mediterranean sea as for example '*minor*', '*affinis*', '*dilatatus*' or '*elongatus*' seem to be no more than different morphotypes of the highly variable Mediterranean population of *Gryphus vitreus* (BORN, 1778). Accordingly, the three articulated specimens and the ventral and a dorsal valves of the lot ML-

ZOO-MAL-01271 labelled as '*Terebratulina affinis*', *T. vitrea* var. *minor*, or '*Terebratulina affinis* = *minor*' (Planche 80Q, T-U) are considered here as small specimens of *Gryphus vitreus* (BORN, 1778). The locality from which this lot comes, 'Lipari', one of the Aeolian Islands (archipelago north of Sicily) is together with the localities from which the specimens of the other two lots come, Corsica and Sardinia, large islands in the Tyrrhenian sea (Planche 80Q, T-U), well known for the abundance on their coasts of *G. vitreus*.

***Terebratulina retusa* (LINNAEUS, 1758)**  
**(Planches 80V-EE, 81A-LL)**

**Material.** An articulated specimen loose inside a glass-tube (Planche 80W), that in the left side in W and X (see also Planche 81B-F). Inside the tube there are also other five articulated specimens but these attached to a light blue card, the first fixed by the dorsal valve and the other four by their ventral (Planche 80X; see also Planche 81A), and a folded piece of paper with the name '*T. caput-serpentis* juv. Napoli' written by hand (Planche 80Z). In the reverse of the card it is written by hand '2. *Terebratulina Caput-Serpentis*. Lin. Naples (Italia). Juv. Monterosato 1884' (Planche 80Y). This glass-tube that has been detached from the card-board to which it was originally glued, is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Terebratulina Caput-serpentis*. Naples. Monterosato.' written on it (Planche 80V). Another label with the registered number ML-ZOO-MAL-01266 is fixed in the reverse of the card-board.

- Four articulated specimens, a ventral valve and a dorsal, probably the counterpart of the preceding, fixed to a light blue card introduced into a glass-tube (Planche 81G-H). In the reverse of the card it is written by hand '2. *Terebratulina Caput-Serpentis* Linné, Corse, jeune, Monterosato 1884' (Planche 81I). Inside the tube there are also two loose articulated specimens (Planche 81O-S) and a folded piece of paper with the name '2. *Terebratulina Caput-Serpentis* Corse Monterosato' written by hand (Planche 81J). The glass-tube is glued to a card-board with an old label attached to it with the words '*Terebratulina Caput-serpentis*. Corse. Monterosato.' written on it (Planche 81G). Another label with the registered number ML-ZOO-MAL-01267 is fixed in the reverse of the card-board. The card-board and the attached glass-tube are enclosed in a small plastic bag.

- Two articulated specimens fixed to a light blue card (Planche 81V) introduced into a glass-tube, the first by the ventral valve and the second (on the right) by the dorsal valve (Planche 81U). In the reverse of the card it is written by hand '2. *Terebratulina caput-serpentis* Lin. Corse, Monterosato 1884' (Planche 81W). Inside the tube there are also two loose articulated specimens and a folded piece of paper with the name '*Terebratulina caput-serpentis* Corse' written by hand (Planche 81X). The glass-tube that has been detached from the card-board to which was originally glued, is now enclosed, together with a card-board (Planche 81T), in a small plastic bag. In the card-board there is an old label with the name '*Terebratulina Caput-serpentis*. Corse. Monterosato.' written on it (Planche 81T). Another label with the registered number ML-ZOO-MAL-01268 is fixed in the reverse of the card-board.

The small plastic bags containing each of the above three lots are enclosed in a bigger bag with a label with the name '*Terebratulina*' written by hand with red ink.

**Remarks.** '*Caput-serpentis*' as *Anomia caputserpentis* LINNAEUS, 1767 is in the synonymy list for *Anomia retusa* Linnaeus, 1758 and described here as *Terebratulina retusa* (LINNAEUS, 1758) (see contribution above). The specimens of the three previous lots come from the coasts of Naples and Corsica (Tyrrhenian sea, in the Mediterranean). These localities are included in the distribution presently accepted for *Terebratulina retusa*, species that has a wide distribution in the Mediterranean sea and the East Atlantic. The specimens of the lots ML-ZOO-MAL-01266 and ML-ZOO-MAL-01267, especially those of the first one (see Planche 80W) are of rather small size, this was already noted and stated in the text written by hand in the reverse of the card to which the specimens were fixed when written the abbreviation 'Juv' (for 'juvenile') (Planche 80Y; see also Planche 81I). These small (juveniles) shells have few and variably wide external ribs, some of which become nodose forming smooth rounded tubercles (Planches 80AA, DD; 81A-F, S), their dorsal valves are posteriorly auriculated (e.g., Planches 80CC-EE; 81A-B). Internally, the ventral valve has a well developed pedicle collar (e.g., Planches 80CC-EE; 81A-B) and hooked teeth without dental plates (Planche 80BB). Dorsal valve internally with socket ridges and crural bases fused and converging crura supporting a short ring like loop (Planche 81K-N), with transverse band ventrally arched (Planches 80BB; 81K-N, Z, LL). The above characters, especially the shell ornamentation of few ribs and the pustules are typical of *T. retusa*.

***Megathiris detruncata* (GMELIN, 1791)  
(Planche 82A-O)**

**Material.** Three articulated specimens loose inside a very small glass-tube (Planche 82B). This tube together with a narrow blue card and a folded piece of paper with the name '*Argiope decollata*' and 'Adr,' (possibly short for 'Adriatic') written by hand (Planche 82D-E) are inside a second glass tube (Planche 82A). In the reverse of the blue card (Planche 82B) the words '*5. Argiope decollata*, Chem. adriatique; Monterosato 1884' are written by hand (see Planche 82C). This last glass-tube that has been detached from the card-board to which it was originally glued, is now enclosed, together with a card-board, in a plastic bag with a new label with the name '*Megathyrus*' [*sic*] written on it by hand and with red ink. In the card-board there is an old label with the name '*Megathyrus decollata*, Chem. adriatique Monterosato.' written on it (Planche 82A). Another label with the registered number ML-ZOO-MAL-00784 is fixed in the reverse of the card-board.

**Remarks.** The so called '*Megathyrus decollata* Chemnitz' is described here as *Megathiris detruncata* (Gmelin) (see '**Remarks**' for *M. detruncata* in the contribution above). In addition, the external and internal characters (especially its lobed brachial loop, see Planche 82G) of the endopunctate specimens of this lot (Planche 82F-O) are rather similar to those present in typical *Megathiris detruncata* (GMELIN, 1791). *Megathiris detruncata* is known from the East Atlantic and the Mediterranean Sea, including the Adriatic Sea, locality from which the specimens of this lot come.

***Argyrotheca cuneata* (RISSO, 1826)  
(Planche 82P-RR)**

**Material.** An articulated specimen loose inside a very small glass-tube (Planche 82Q-R). This tube together with a narrow blue card (Planche 82R) and a folded piece of paper with the name '*Cistella cuneata* Palermo' written by hand (Planche 82T) are inside a second glass tube (Planche 82Q). In the reverse of the blue card the words '6. *Cistella cuneata*, Risso Palermo (Sicile); Monterosato' are written by hand (see Planche 82S). This last glass-tube that has been detached from the card-board to which it was originally glued (Planche 82P), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Cistella cuneata*, Risso Palermo Monterosato.' written on it (Planche 82P). Another label with the registered number ML-ZOO-MAL-01263 is fixed in the reverse of the card-board.

- Two articulated specimens loose inside a very small glass-tube (Planche 82BB-CC). This tube together with a narrow blue card (Planche 82CC) and a folded piece of paper with the name '*Cistella cuneata* Trapani' written by hand (Planche 82EE) are inside a second glass tube (Planche 82BB). In the reverse of the blue card the words '6. *Cistella cuneata*, Risso Trapani; Monterosato' are written by hand (see Planche 82DD). This last glass-tube that has been detached from the card-board to which it was originally glued (Planche 82AA), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Cistella cuneata*, Risso Trapani Monterosato.' written on it (Planche 82AA). Another label with the registered number ML-ZOO-MAL-01264 is fixed in the reverse of the card-board.

The small plastic bags containing each of the above two lots are enclosed in a bigger bag with a label with the name '*Cistella*' written by hand with red ink.

**Remarks.** *Argyrotheca cuneata* can be easily distinguished by having broad ribs and faint growth lines on the external surface of each valve with a distinctive red or pink colouration between ribs (see Planche 82U-Z, FF-II, LL-MM, PP). Dorsal interior with median septum high and wide anteriorly, without accessory septa and brachidium formed of two slender, arcuate lamellae attached to base of crura, valve floor and anterior extremity of median septum (e.g., Planche 82JJ-KK, PP-RR). *Argyrotheca cuneata* is a frequent species in the Mediterranean Sea so, the localities 'Palermo' and 'Trapani' in the Sicily Island as written in the reverse of the blue cards, folded piece of papers and/or old labels (Planche 82P, S-T, AA, DD-EE), are in agreement with the commonly accepted distribution of the species.

***Joania cordata* (RISSO, 1826)  
(Planches 82SS-MMM; 83A-P)**

**Material.** Three tiny and articulated specimens loose inside a very small glass-tube (Planche 82UU). This tube together with a narrow blue card and a folded piece of paper with the name '*Cistella neapolitana* Trapani' written by hand (Planche 82WW) are inside a second glass tube (Planche 82TT). In the reverse of the blue card the words '7. *Cistella neapolitana*, Sc. Trapani; Monterosato 1884' are written by hand (see Planche 82VV). This last glass-tube that has been

detached from the card-board to which it was originally glued, is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Cistella neapolitana*, Trapani, Monterosato.' written on it (Planche 82SS). Another label with the registered number ML-ZOO-MAL-01265 is fixed in the reverse of the card-board.

- An articulated specimen loose inside a very small glass-tube (Planche 83I). This tube together with a narrow blue card (Planche 83G) and a folded piece of paper with the name '*Cistella cordata neapolitana* Palermo' written by hand (Planche 83J) are inside a second glass tube that has been detached from the card-board to which it was originally glued (Planche 83F). In the reverse of the blue card the words '*7. Cistella cordata*, Risso; Palermo; Monterosato 1884' are written by hand (see Planche 83H). This glass-tube is now enclosed together with a card-board with an old label with the name '*Cistella cordata* Risso. Palermo. Monterosato.' written on it, in a small plastic bag. Another label with the registered number ML-ZOO-MAL-00939 is fixed in the reverse of the card-board.

The small plastic bags containing each of the above two lots are enclosed in the same bigger bag with a label with the name '*Cistella*' containing the two lots of *Argyrotheca cuneata* (see above).

**Remarks.** '*Cistella neapolitana*' and '*Terebratula neapolitana* Scacchi, 1833' are in the synonymy list for *Terebratula cordata* Risso, 1826 and described here as *Joania cordata* (RISSO, 1826) (see contribution above). *Joania cordata* has a narrow hinge, a heart-shaped outline (e.g., Planches 82XX-YY, FFF-GGG, LLL-MMM; 83K-L), and few rounded and weakly defined ribs (e.g., Planches 82XX-YY, FFF-GGG, LLL-MMM; 83K-L). Dorsal median septum with tuberculate antero-ventral edge, appearing serrated when viewed laterally (e.g., Planches 82AAA-BBB, DDD-EEE; 83D-E) and with numerous radial ridges terminating anteriorly in well defined tubercles marginal to the trace of the lophophore (e.g., Planches 82XX-YY, AAA-BBB, DDD-GGG, LLL; 83B, D-E, O). *Joania cordata* occurs in the East Atlantic being very abundant in the Mediterranean Sea. So, as it happened with the previous species, the localities 'Palermo' and 'Trapani' as written in the reverse of the blue cards, folded piece of papers and/or old labels (Planches 82SS, VV; 83F, H), are in agreement with the accepted distribution of the species.

***Megerlia truncata* (LINNAEUS, 1767)  
(Planches 83Q-SS; 84A-I)**

**Material.** Two articulated specimens fixed one by his dorsal valve and the other by the ventral, to a light blue card inside a glass-tube (Planche 83Q-T). In the reverse of the card it is written by hand '*3. Megerlia truncata*, Límne var *inflata* Sciacca (Sicile). Monterosato 1884' (Planche 83U). Inside The glass-tube there is also a folded piece of paper with the name '*Megerlia truncata* var. *inflata* Sciacca' written by hand (Planche 83W). The glass-tube is glued to a card-board with an old label with the name '*Megerlia truncata* Lin. Sciacca Monterosato.' written on it (Planche 83Q). A label with the registered number ML-ZOO-MAL-01272 is fixed in the reverse of the card-board. The card-board and the attached glass-tube are enclosed in a small plastic bag.

- Three articulated specimens fixed by their ventral valve to a light blue card inside a glass-tube (slightly broken) (Planche 83X-Y). In the reverse of the card it is written by hand with black ink: '3. *Megerlia truncata* Sciacca (Sicile) Monterosato 1884' and intercalated and written with pencil: 'Limné var *inflata*' (Planche 83BB). Inside the glass-tube there is also a folded piece of paper with the name '3 *Megerlia truncata* Sciacca Sicile Monterosato' written by hand (Planche 83CC). The glass-tube is glued to a card-board with an old label with the name '*Megerlia truncata* Linné. Sciacca. Monterosato.' written on it (Planche 83X). A label with the registered number ML-ZOO-MAL-01273 is fixed in the reverse of the card-board. The card-board and the attached glass-tube are enclosed in a small plastic bag.

- Three articulated specimens fixed by their ventral valve to a light blue card (Planche 83EE-FF) plus other three articulated specimens loose inside the tube (Planche 83HH-MM). In the reverse of the card it is written by hand: '3. *Megerlia truncata* Linn. Corse Monterosato 1884.' (Planche 83GG). Inside the glass-tube there is also a folded piece of paper with the name '*Megerlia truncata* Corse' written by hand (Planche 83NN). This glass-tube that has been detached from the card-board to which it was originally glued (Planche 83DD), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Megerlia truncata* Linné. Corse Monterosato.' written on it (Planche 83DD). Another label with the registered number ML-ZOO-MAL-01274 is fixed in the reverse of the card-board.

- Three articulated specimens fixed by their ventral valve, and a fourth one fixed by the dorsal, to a light blue card inside a glass-tube (Planche 83PP-QQ). In the reverse of the card it is written by hand: '3. *Megerlia truncata* Lin. Corse v. *monstruosa*. Monterosato' (Planche 84C). Inside the glass-tube there is also a folded piece of paper with the name '*Megerlia truncata monstruosa* Corse' written by hand (Planche 84D). This glass-tube that has been detached from the card-board to which it was originally glued (Planche 83OO-PP), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Megerlia truncata* Lin. Corse.' written on it (Planche 83OO). Another label with the registered number ML-ZOO-MAL-01275 is fixed in the reverse of the card-board.

- Six articulated specimens loose inside the tube (Planche 84F), and a light blue card (Planche 84G) in the reverse of which it is written by hand: '3. *Megerlia truncata*, Linné Trapani (Sicile). Monterosato 1884.' (Planche 84H), and a folded piece of paper with the name '*Megerlia truncata* juv. Trapani' written by hand (Planche 84I). This glass-tube that has been detached from the card-board to which it was originally glued (Planche 84E), is now enclosed, together with a card-board, in a small plastic bag. In the card-board there is an old label with the name '*Megerlia truncata* Lin. Trapani. Monterosato.' written on it (Planche 84E). Another label with the registered number ML-ZOO-MAL-01276 is fixed in the reverse of the card-board.

The small plastic bags containing each of the above five lots are enclosed in a bigger bag with a label with the name '*Megerlia* (Brachiopodes)' written by hand with red ink.

**Remarks.** The shells of the five lots above are wider than long, transversely oval in outline, with broad and nearly straight hinge line (Planches 83R, T, Y-Z, FF, HH-MM, QQ-SS; 84G), ventribiconvex to concavoconvex in lateral profile, anterior commissure slightly unisulcate

(e.g., Planche 83S, V, AA), exterior capillate or costellate with the striae slightly nodulose (Planche 83R, V, Y, RR-SS). Valve interiors radially tuberculate and the loop bifurcate, with distal extensions forming complete ring, descending branches extending from cardinalia to ring (e.g., Planche 83V). The shell, as in other terebratulides, is endopunctate.

Frequently, shells with fine pustules confined to the ribs, in the posterior region of ventral valve and growth lines well developed, lamellose, specially anteriorly on ventral valve, with the dorsal valve and loop not deformed and the dorsal interior radially tuberculate were described as *Megerlia truncata*, while the shells finely pustulose, with the ventral valve exterior with tubercles not confined to the ribs, the dorsal valve and the loop deformed (e.g., Planches 83PP-QQ; 84A-B) and the dorsal interior faintly tuberculate were assigned to *Megerlia monstruosa* (e.g., Planches 83PP-SS; 84C-D). Some authors considered 'monstruosa' as a 'variety' of 'truncata' (as it happens also with 'inflata'; e.g., lot ML-ZOO-MAL-01272, Planche 83U) while others based mainly in differences in the development of the external tubercles and in the type and density of the endopunctae, include 'truncata' in *Megerlia* while keeping 'monstruosa' in 'Pantellaria'. However, here and as it is commonly done in recent studies, the species *Megerlia echinata* (FISCHER & CÆHLERT, 1890) and *Megerlia monstruosa* (SCACCHI, 1833) are included in the synonymy of *Megerlia truncata* (LINNAEUS, 1767) (see contribution above).

*Megerlia truncata* is a common species in the Mediterranean Sea so, the localities 'Trapani' and others in the Sicily and Corsica Islands as written in the reverse of the cards, folded piece of papers and/or old labels (Planches 83U, BB-DD, GG, NN, OO; 84C-D, E, H), are in agreement with the commonly accepted distribution of the species.

## B) Specimens in the Collection of Frédéric Cailliaud

### *Hemithiris psittacea* (GMELIN, 1791) (Planche 84J-X)

**Material.** An articulated specimens fixed by the dorsal valve to the upper right corner of a light green card-board (Planche 84J). In this card-board there are also the glue remains where another three specimens or disarticulated valves seem to have been originally fixed. The number 1233 is written, by hand, on the top right corner of the card-board. The card-board has an old label with the name '*Rhynchonella psittacea* Terre Neuve (estomac des morues) Coll. Cailliaud' written on it (Planche 84J). A label with the registered number ML-ZOO-MAL-00345 is fixed in the reverse of the card-board. The card-board, a loose articulated specimen (Planche 84O-X), and a white card with the words 'RHYNCHONELLA PSITTACEA *Terre Neuve (estomac de morue)*' written on it were kept together in a plastic bag.

**Remarks.** The two articulated specimens of the lot ML-ZOO-MAL-00345 (Planche 84J-X) have the shell impunctate, subtriangular, with greatest width anteriorly to midlength, globose, dorsibiconvex (Planche 84K, O-U), with the anterior commissure broadly uniplicate, but dorsal fold indistinct (Planche 84T-U). Valve exteriors bearing numerous, fine, dense, radial costellae and growth lines (Planche 84K, O-Q, T-U, X). The ventral beak is prominent, long, suberect,



and the foramen hypothryid with disjunct deltidial plates (Planche 84L, O-P, R-S). Internally, the ventral valve presents a short pedicle collar (Planche 84O-P) and cyrtomatodont teeth supported by strong dental plates, which are almost parallel to the plane of symmetry (Planche 84M-N). Dorsal interior with low median ridge and long crura, flattened posteriorly, and with moderate concave surfaces dorsally becoming more acute at the distal ends (Planche 84N, U-V).

The above morphology is characteristic of the species of the rhynchonellide genus *Hemithiris*, differing *H. woodwardi* (ADAMS, 1863) from *H. psittacea* (GMELIN, 1791) (species to which the specimens of the lot ML-ZOO-MAL-00345 are assigned) mainly by its much broader, triangular shell outline, absence of strong radial grooves or impressed line on the valve surface and possession of a smaller and less incurved beak (see contribution above). *Hemithiris psittacea* is a common boreal species, has a cold-water circumpolar distribution and its relatively rare occurrences in British waters represent its southern-most extension into the Atlantic (Brunton and Curry, 1979, p. 32). As it is written in the old label (Planche 84J), the specimens of the lot ML-ZOO-MAL-00345 were recovered from the stomach of codfish from Newfoundland (Terre-Neuve) coasts.

***Lacazella mediterranea* (RISSO, 1826)**  
**(Planche 84Y-FF)**

**Material.** A glass-tube with a ventral valve, a dorsal, probably the counterpart of the preceding, and two articulated and open specimens fixed to a black card (Planche 84Z-AA). In the reverse of the card nothing is written. This glass-tube that has been detached from the card-board to which it was originally glued (Planche 84Y), is now enclosed, together with a card-board, and a small piece of paper with the words '*Terebr : dimidiata* Naples –Scachi' written on it by hand (Planche 84FF), are inside a plastic bag. The card-board has an old label with the name '*Thecidea mediterranea* Risso s. g. *Lacazella*. Côtes de Nice. Coll. Cailliaud' written on it (Planche 84Y). The number 1288 is written, by hand, on the top right corner of the card-board. A label with the registered number ML-ZOO-MAL-00338 is fixed in the reverse of the card-board.

**Remarks.** The brachidium of these small and endopunctate Mediterranean shells of the lot ML-ZOO-MAL-00338, with wide median ramus that expands posteriorly (Planche 84BB-DD) is typical of *Lacazella mediterranea* (RISSO, 1826). In the close related *Pajaudina atlantica* LOGAN, 1988, known only from the Canary Islands, the median ramus that is lobulate, interdigitate with the descending apparatus. Besides these morphological differences in the dorsal valve, the ventral, with convex and well differentiated pseudodeltidium, straight hinge line slightly smaller than the maximum width, which is near midvalve, and the anterior commissure slightly uniplicate, with the interior tuberculate, with two small plates within the umbo (hemispondylium) supported by a short median septum and two relatively well developed hinge teeth (Planche 84EE) is rather similar to that of typical *Lacazella mediterranea*. As it is written in the old label (Planche 84Y) the lot ML-ZOO-MAL-00338 come from 'Côtes de Nice' in agreement with the commonly accepted distribution of the species (although some authors suggested a more restricted distribution of the species, the SW Mediterranean

Sea: Tunisia and Algeria). Inside the plastic bag containing this lot there is also a small piece of paper with the words '*Terebr : dimidiata* Naples –Scachi' written on it by hand (Planche 84FF). *Terebratulina dimidiata* SCACCHI, 1833 is in the synonymy list for *Megathiris detruncata* (GMELIN, 1791) (see Emig, 2012, p. 20), so, this piece of paper seems to be incorrectly placed here, and should be transferred to lot ML-ZOO-MAL-00333 which has an old label with the name '*Megathiris decollata* Chem. Naples Coll. Cailliaud' written on it. Doing this, the name of the species (*Terebratulina dimidiata* SCACCHI, 1833 = *Megathiris detruncata* (GMELIN, 1791) and the locality (Naples) perfectly agree.

***Terebratulina septentrionalis* ? (COUTHOUY, 1838)  
(Planche 84GG-JJ)**

**Material.** Two articulated specimens fixed (the first by the ventral valve and the second by the dorsal) to a light green card-board (Planche 84GG). In the card board there is also a dorsal valve fixed and the place where it seems that another specimen or disarticulated valve, possibly the counterpart of the remained dorsal was also fixed (Planche 84GG). Unfortunately this specimen or disarticulated valve is not preserved in the plastic bag containing this lot. The number 1267 is written, by hand, on the top right corner of the card-board. The card-board has an old label with the name '*Terebratulina caput-serpentis* Lin. Bergen Norvège Coll. Cailliaud' written on it (Planche 84GG). A label with the registered number ML-ZOO-MAL-00408 is fixed in the reverse of the card-board. The card-board is now enclosed in a plastic bag.

**Remarks.** *Terebratulina septentrionalis* is very similar externally and internally to *Terebratulina retusa* (LINNAEUS, 1758) from which seems to differ mainly in the kind of ribbing, coarse in *T. retusa* and finer in *T. septentrionalis* (see discussion in Fischer & Cœhlert, 1892a, p. 9-16; Brunton & Curry, 1979, p. 40-41; Logan 1979, p. 38; Cooper 1981b, p. 11; Cohen *et al.*, 1991; Endo *et al.*, 1994; Álvarez & Emig, 2005, p. 139-140). The ribs observed in the specimens of the lot ML-ZOO-MAL-00408 seems to be finer and more numerous than those present in specimens of similar size of *Terebratulina retusa*, and the pustules typical of this last species are absent (Planche 84II). Besides, the locality 'Bergen, Norvège' written in the old label (Planche 84GG) is consistent with the distribution of both *T. retusa* and *T. septentrionalis*. However, as these two rather similar species have often been confused, the exact distribution of the two species is unclear. Therefore, from the above discussion, in this paper the shells of the lot ML-ZOO-MAL-00408 are tentatively assigned to *T. septentrionalis* (COUTHOUY, 1838).

***Megathiris detruncata* (GMELIN, 1791)  
(Planche 85A-H)**

**Material.** Four articulated specimens fixed, the first two by the ventral valve and the second pair by the dorsal, to a light green card-board (Planche 85A). In this card-board there are also the glue remains where another two specimens or disarticulated valves seem to have been originally fixed. The number 1285 is written, by hand, on the top right corner of the card-board. The card-board has an old label with the name '*Megathiris decollata* Chem. Naples Coll. Cailliaud' written on it (Planche 85A). A label with the registered number ML-ZOO-MAL-00333 is fixed in the reverse of the card-board. A loose dorsal valve and a ventral probably

the counterpart of the preceding (Planche 85B, G-H), were kept together in the same plastic bag that the card-board. Probably, these two valves were fixed in the now 'empty places' on the card-board [see Planche 85A (x1.2) and B (x2)].

**Remarks.** See comments above on 'Remarks' to *Megathiris detruncata* (GMELIN, 1791), lot ML-ZOO-MAL-00784 in the Collection of Marquis de Monterosato.

***Magellania flavescens* (LAMARCK, 1819)  
(Planche 85I-BB)**

**Material.** An articulated specimen fixed by the ventral valve to the left side of a light green card-board (Planche 85I). In this card-board there are also the glue remains where another three specimens or disarticulated valves seem to have been originally fixed (Planche 85I). These detached specimens could be those illustrated in Planche 85L-BB (a ventral valve and two articulated specimens) that are included in the plastic bag. The number 1270 is written, by hand, on the top right corner of the card-board. The card-board has an old label with the name '*Magellania flavescens* Valen. Océanie.' written on it (Planche 85I). In the reverse of the card-board it is written by hand: '3, *Terebratula flavescens* Lam. 6. *Terebratula australis* Quoy, Donne par Mr Chiron du Bronsain' (Planche 85J). A label with the registered number ML-ZOO-MAL-00332 is fixed in the reverse of the card-board.

**Remarks.** In the reverse of the card-board of this lot the name of two species are written by hand: '*Terebratula flavescens* Lam.' and '*Terebratula australis* Quoy' (Planche 85J). These two species should be considered as synonymous (e.g., Foster 1974, p. 123; Emig *et al.*, 2016).

The ventral valve (Planche 85L-O) and the two articulated specimens (Planche 85P-AA) loose in the plastic bag containing this lot are of medium size (observed maximum length, 35 mm; Planche 85V), narrow, of elongate oval or subpentagonal outline, longer than wide with maximum width about middle of the shell, ventribiconvex in lateral profile (Planche 85R-U, X-Z), anterior commissure unisulcate (Planche 85S-T, AA), smooth as juvenile, becoming costate (Planche 85L-M, P-T, V-Y, AA-BB), and with numerous growth lines, some of them rather lamellose (Planche 85V-Y, AA-BB). The ventral beak is prominent, suberect to erect, the foramen is large, mesothyridid, attrite, the beak ridges weak to moderate, with delthyrium restricted by conjunct deltidial plates forming a well developed and moderately high symphytium. Internally the ventral valve has a short sessile collar, well developed cyrtomatodont teeth without dental plates and weak muscle impressions. Cardinalia lamellar with inner hinge plates wide and steeply inclined dorsomedially and narrow outer hinge plates divided by narrow crural bases, hinge plates excavate, meeting on medium septum to form septalium, the cardinal process is a transversely oval myophore, the crura are short and the crural processes prominent. All these morphological characteristics are typical of *Magellania flavescens* (LAMARCK, 1819).

The shell of the articulated specimen fixed to the left side of the card board (Planche 85I) differs from the other specimens of the lot by its smoother shell [not anteriorly costate as the other specimens are (compare Planche 85K and L, P-T, V-W, AA-BB)] with weakly developed and irregularly spaced growth lines (Planche 85K), its broader outline [more subcircular than

elongate oval (compare Planche 85K and L, P-Q, V, W)], its almost rectimarginate anterior commissure and its shorter ventral beak, with sharper beak ridges (Planche 85K). Internally its pedicle collar is shorter and the septalium has more steeply descending hinge plates that meet a relatively lower but slightly longer median septum. In none of the specimens of this lot is the loop preserved. The shell of all specimens is endopunctate being the puncta density higher in the fixed specimen.

In short, while the loose specimens clearly show the typical characteristics of *Magellania flavescens* (LAMARCK, 1819), the name written in the old label, the morphology of the articulated specimen fixed to the left side of the card board (Planche 85I) resembles that of the specimens of *Magellania venosa* (SOLANDER, 1789) illustrated by Fischer & Ehlert (1892b, pl. 12 fig 8; see also pl. 11 fig 12).

Finally, it should be noted that the specimens of *Magellania venosa* studied by Fischer & Ehlert were obtained with 'la *Romanche*' from 'la Terre-de-Feu et dans le détroit de Magellan' in southernmost South America (Fischer & Ehlert, 1892b, p. 319), whereas the locality 'Océanie' written in the old label fixed to the card-board of this lot is in agreement with the distribution of the species *Magellania flavescens* (LAMARCK, 1819), species that has a wide distribution in the Pacific Ocean, specially in the waters around Australia.

## Échantillons complémentaires (brachiopodes) découverts récemment dans les collections Œhlert et Cailliaud du Musée des Sciences de Laval

par Jérôme Tréguier & Fernando Álvarez

L'impression de ce hors-série était presque achevée lorsqu'il a été retrouvé dans les collections du Musée des Sciences seize lots d'échantillons de brachiopodes actuels mélangés dans des tiroirs contenant des fossiles. Afin d'être exhaustif sur cette collection, nous avons voulu lister ces échantillons rendant ainsi nécessaire cet *addendum*. Toutefois, compte tenu des délais, les échantillons ont bien été redéterminés par Fernando Álvarez mais ils n'ont pas pu être intégrés dans son article.

Le nombre total de brachiopodes actuels est, en conséquence, porté à 730 (collection D.-P. Œhlert : 285 individus entiers, 192 valves dorsales et 174 valves ventrales ; collection Monterosato : 45 individus entiers, 2 valves dorsales et 4 valves ventrales et collection Cailliaud : 17 individus entiers, 5 valves dorsales et 6 valves ventrales).

### I. Collection Œhlert

Tous ces échantillons n'ont pas été conditionnés de la même manière que ceux étudiés précédemment. Ils n'ont pas été préparés par D.-P. Œhlert.

#### 1. *Terebratulina septentrionalis* (COUTHOUY, 1838) - Lot ML-MAL-07054

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 86A-B). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *T. septentrionalis* Hirond. Long 49 lat 46. » (Planche 86B). Le tube contient huit individus entiers, six valves ventrales (cinq complètes et une cassée) et deux dorsales (une avec le brachidium cassé et la seconde cassée en deux) (Planche 86C). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07054. « *T. septentrionalis* » correspond à *Terebratulina septentrionalis* (COUTHOUY, 1838) et « Hirond. » au navire du Prince de Monaco l'« *Hirondelle* ». D'après Fischer & Œhlert (1892a, p. 24), « Long 49 lat 46 » coïncide à la localité 46°4'40''N et 49°2'30''W de la station numéro 161 dont les prélèvements ont eu lieu le 2 août 1887 par l'*Hirondelle* dans les parages de Terre-Neuve, à 1267 m de profondeur sur un fond de cailloux, vase et coquilles.

#### 2. *Terebratulina septentrionalis* (COUTHOUY, 1838) - Lot ML-MAL-07055

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 86D-E). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *T. septentrionalis* Hir. Long 49 lat 46. » (Planche 86E). Le tube contient cinq individus entiers et deux valves dorsales (Planche 86F-G). À l'intérieur du tube il y a également une valve droite et une gauche d'un Lamelibranche (Planche 86H). Le tube est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07055. « *T. septentrionalis* » correspond à *Terebratulina septentrionalis* (COUTHOUY, 1838) et « Hir. » au navire du Prince de Monaco l'« *Hirondelle* ». D'après Fischer & Œhlert

(1892a, p. 24), « Long 49 lat 46 » coïncide à la localité 46°4'40''N et 49°2'30''W de la station numéro 161 dont les prélèvements ont eu lieu le 2 août 1887 par l'*Hirondelle* dans les parages de Terre-Neuve, à 1267 m de profondeur sur un fond de cailloux, vase et coquilles.

### 3. *Terebratulina septentrionalis* (COUTHOUY, 1838) - Lot ML-MAL-07056

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 86I). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *T. septentrionalis* Hirondell. » (Planche 86I). Le tube contient une valve dorsale (Planche 86J-K). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07056. « *T. septentrionalis* » correspond à *Terebratulina septentrionalis* (COUTHOUY, 1838) et « *Hirond.* » au navire du Prince de Monaco l'« *Hirondelle* ». D'après Fischer & Ehlert (1892a, p. 10 et 24), l'espèce *Terebratulina septentrionalis* a été recoltée dans les parages de Terre-Neuve par l'*Hirondelle*, soit le 2 août 1887 dans la station n° 161 (46°4'40''N et 49°2'30''W) à 1267 m de profondeur sur un fond de cailloux, vase et coquilles, soit le 3 août 1887 dans la station n° 162 (46°50'6''N et 50°11'45''W) à 155 m de profondeur sur un fond de cailloux.

### 4. *Platidia anomioides* (SCACCHI ET PHILIPPI, in PHILIPPI, 1844) - Lot ML-MAL-07057

Le lot ML-MAL-07057 est différent des autres lots, car l'échantillon est conservé dans un tube en verre long et fin (H. 6,5 cm, Diam. 1,5 cm) fermé par un bouchon en liège (Planche 86L). Une étiquette orange imprimée est collée sur le tube (et non sur le bouchon) sur lequel est noté : « Collections de S.A.S. le prince de Monaco Station ». Le chiffre 899 est écrit à la main après « Station » (Planche 86L). A l'intérieur du tube il y a deux étiquettes manuscrites. Sur la première il est écrit « stn 899 12 août 1897 chalut 200 m » (Planche 86M) et sur la deuxième « *Platidia anomioides* » (Planche 86N). Le tube contient un individu entier (Planche 86O-P). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07057. « *Platidia anomioides* » correspond à *Platidia anomioides* (SCACCHI ET PHILIPPI, in PHILIPPI, 1844). D'après Thoulet (1905, p. 29), les échantillons de la station 899 ont été récoltés le 12 août 1897 dans les Açores, dans le banc de la Princesse-Alice (37°57'N et 29°14'45''W) par chalut à une profondeur de 200 m. La campagne océanographique fut effectuée par la *Princesse Alice*, un trois-mâts goélette qui réalisa, entre 1892 et 1897, sept campagnes de recherches scientifiques, en Méditerranée et en Atlantique au cours desquelles il découvrit dans le sud des Açores un haut fond culminant à une quarantaine de mètres de profondeur auquel il donna le nom de « banc de la Princesse Alice » (Estival, 2003).

### 5. *Stenosarina davidsoni* LOGAN, 1998 - Lot ML-MAL-07058

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 86Q-R). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *L. sphen.* 6 juillet Drag 3. » (Planche 86R). Le tube contient trois individus entiers et une valve ventrale (Planche 87A), plus une valve d'un Lamellibranche (Planche 86S). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07058. « *L. sphen.* » correspond à *Liothyryna sphenoides*, aujourd'hui nommée *Stenosarina davidsoni* LOGAN, 1998. D'après Fischer & Ehlert (1891, p.

60), « 6 juillet drag 3 » coïncide au dragage n°3 qui a eu lieu le 6 juillet 1882 par le *Travailleur* à une profondeur de 512 m au Nord de l'Espagne.

6. *Stenosarina davidsoni* LOGAN, 1998 - Lot ML-MAL-07059

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 87B-C). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *L. sphen.* 6 juillet Drag 3. » (Planche 87C). Le tube contient deux individus entiers, deux valves dorsales, une ventrale (Planche 87D) et deux valves de Lamellibranches (Planche 87E-F). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07059. « *L. sphen.* » correspond à *Liothyryna sphenoides*, aujourd'hui nommée *Stenosarina davidsoni* LOGAN, 1998. D'après Fischer & Cehlert (1891, p. 60) « 6 juillet drag 3 » coïncide au dragage n°3 qui a eu lieu le 6 juillet 1882 par le *Travailleur* à une profondeur de 512 m au Nord de l'Espagne.

7. *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887) - Lot ML-MAL-07060

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 87G-H). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *H. cornea* Mogador 1050 m » (Planche 87H). Le tube contient trois individus entiers [un spécimen entier et deux valves dorsales et deux ventrales appartenant probablement aux mêmes individus] (Planche 87I-L). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07060. « *H. cornea* » correspond à *Hemithyris cornea*, aujourd'hui nommée *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887). D'après Fischer & Cehlert (1891, p. 15), « Mogador 1050 m » coïncide au dragage n° 38 qui a eu lieu le 27 juin 1883 par *Le Talisman* à une profondeur de 1050 m au large de Mogador.

8. *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887) - Lot ML-MAL-07061

L'échantillon est conservé dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 87M). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *H. cornea* Sahara 9 juillet » (Planche 87M). Le tube contient un individu entier (Planche 87N-O). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07061. « *H. cornea* » correspond à *Hemithyris cornea*, aujourd'hui nommée *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887). D'après Fischer & Cehlert (1891, p. 15), « Sahara 9 juillet » coïncide au dragage n° 73 ou 75 ou 76 qui a eu lieu le 9 juillet 1883 par *Le Talisman* sur les côtes du Soudan.

9. *Fallax dalliniformis* ATKINS, 1960 - Lot ML-MAL-07062

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 87P-Q). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *Dallina septigera* Soudan » (Planche 87Q). Le tube contient trois individus entiers (Planches 87R; 88A-H). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07062. D'après Fischer & Cehlert (1891, p. 67), « Soudan » coïncide au dragage n° 73 ou 74 ou 75 ou 76 qui a eu lieu le 9 juillet

1883 par *Le Talisman* sur les côtes du Soudan. Ici, Atkins (1960a, b) est suivi en réassignant en *Fallax dalliniformis* ATKINS, 1960, les spécimens étiquetés comme *Dallina septigera* (Lovén) (Planche 87Q) mais ayant les dents de la charnière soutenues par des plaques dentaires, un large collier pédonculaire et une boucle reliée à la cloison médiane (Planche 88C-F).

10. *Terebratella dorsata* (GMELIN, 1791)- Lot ML-MAL-07063

L'échantillon est conservé dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 88I). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *T. dorsata* Cap Horn » (Planche 88I). Le tube contient un individu entier (Planche 88J-K). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07063. « *T. dorsata* » correspond à *Terebratella dorsata* (GMELIN, 1791). Compte tenu du lieu de récolte « Cap Horn », l'échantillon a probablement été prélevé par *La Romanche* entre le 9 octobre 1882 et le 1<sup>er</sup> août 1883, par des profondeurs comprises entre 13 et 220 m.

11. *Magellania flavescens* (LAMARCK, 1819) - Lot ML-MAL-07064

L'échantillon est conservé dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège (Planche 88L-M). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *Magellan. flavescens* Port Jackson Australie » (Planche 88M). Le tube contient un individu entier (Planche 88N-Q). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07064. « *Magellan. Flavescens* » correspond à *Magellania flavescens* (LAMARCK, 1819).

12. *Terebratulina retusa* (LINNÉ, 1758) - Lot ML-MAL-07065

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 2,6 cm) fermé par un bouchon en liège (Planche 89A). Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *T. caput serpentis* Ecosse entre Crinan et Oban » (Planche 89A). Le tube contient dix individus entiers et une valve dorsale et une ventrale appartenant probablement au même animal (Planche 89B). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07065. « *T. caput serpentis* » correspond à *Terebratulina caput-serpentis*, aujourd'hui nommée *Terebratulina retusa* (LINNÉ, 1758).

13. *Fallax dalliniformis* ATKINS, 1960 - Lot ML-MAL-07066

Les échantillons sont conservés dans un tube en verre (H. 6 cm, Diam. 3,2 cm) fermé par un bouchon en liège (Planche 89C). Une étiquette est collée sur le bouchon avec une inscription peu lisible (Planche 89C). Il est probablement écrit « *Dallina septigera* » mais le reste de l'écriture est illisible (Planche 89D). Le tube contient cinq individus entiers (Planche 89E-K). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collé une étiquette avec le numéro d'inventaire ML-MAL-07066. Comme ci-dessus, Atkins (1960a, b) est suivi en réassignant en *Fallax dalliniformis* ATKINS, 1960, les spécimens étiquetés comme *Dallina septigera* (Lovén) (Planche 89D) mais ayant les dents cardinales soutenues par des plaques dentales (Planche 89J-K), un large collier pédonculaire et une boucle reliée au septum médian (Planche 89H-I).



14. *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887) - Lot ML-MAL-07067

Les échantillons sont conservés dans un tube en verre (H. 4,1 cm, Diam. 3,1 cm) fermé par un bouchon en liège. Une étiquette est collée sur le bouchon sur lequel il est écrit à la main « *H. cornea* » (Planche 89L). Le tube contient deux individus entiers (Planche 89M-P). Il est enfermé dans un sac plastique minigrip avec zip sur lequel est collée une étiquette avec le numéro d'inventaire ML-MAL-07067. « *H. cornea* » correspond à l'espèce *Hemithyris cornea* aujourd'hui nommée *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887).

## II. Collection Cailliaud

Deux lots proviennent de la collection Cailliaud.

1. *Gryphus vitreus* (BORN, 1778) - Lot ML-MAL-07052

Deux individus entiers sont collés, par la valve ventrale, sur un support cartonné de couleur vert clair (Planche 89Q). Sur ce dernier, est collée une étiquette sur laquelle est écrit à la main « *Terebratula vitrea* Méditerranée » (Planche 89Q). Le numéro 1269 est également inscrit en haut à droite du carton (Planche 89R). Le carton avec les deux brachiopodes est enfermé dans un sac plastique minigrip avec zip sur lequel est collée une étiquette avec le numéro d'inventaire ML-MAL-07052. A l'intérieur de ce sac, il y a également une valve ventrale, mais qui ne correspond pas au support cartonné (Planche 89S). « *Terebratula vitrea* » est aujourd'hui nommée *Gryphus vitreus* (BORN, 1778).

2. *Megerlia truncata* (LINNÉ, 1767) - Lot ML-MAL-07053

Deux individus entiers, deux valves ventrales et deux dorsales, correspondant aux mêmes animaux, sont collés sur un support cartonné de couleur vert clair (Planche 89T). Sur ce dernier, est collée une étiquette sur laquelle est écrit à la main « *Mühlfeldtia truncata* Gmel. Côtes de Barbarie Coll. Cailliaud » (Planche 89T). Le numéro 1276 est également inscrit en haut à droite du carton. Le carton, avec les brachiopodes, est enfermé dans un sac plastique minigrip avec zip sur lequel est collée une étiquette avec le numéro d'inventaire ML-MAL-07053. A l'intérieur de ce sac, il y a deux étiquettes manuscrites. Sur la première, il est écrit « *Terebratula truncata* (Gmel.) Lam » (Planche 89U) et sur la deuxième « Térébratule tronquée *Terebratula truncata* Côtes de Barbarie Lam. » (Planche 89V). *Mühlfeldtia truncata* est aujourd'hui nommée *Megerlia truncata* (LINNÉ, 1767). « Côte de Barbarie » était le terme employé par les européens jusqu'au 19<sup>e</sup> siècle pour invoquer les régions côtières correspondant aujourd'hui au Maroc, l'Algérie, la Tunisie, et la Libye.



# Les Brachiopodes des côtes françaises métropolitaines

par Christian C. Emig

**Résumé** : Dans les Zone économique exclusive française (océan Atlantique) et Zone de protection écologique française (mer Méditerranée), les brachiopodes sont tous épibiontes. La morphologie et l'anatomie de l'adulte sont brièvement décrites, ainsi que les principales caractéristiques de leur histoire naturelle. Leur distribution bathymétrique s'étend depuis les zones littorales jusque dans l'étage Bathyal. 27 espèces, réparties en 22 genres, ont été recensées avec respectivement 6 espèces en Manche, 23 dans l'Atlantique et 11 en mer Méditerranée. Les données sur la répartition géographique des brachiopodes au large des côtes françaises proviennent presque exclusivement des campagnes océanographiques. Sur le plateau continental, les brachiopodes sont généralement cryptiques, donc peu accessibles depuis la surface, nécessitant des plongées en scaphandre autonome, d'autant que leur densité est faible et leur taille petite, souvent moins d'un centimètre. En revanche, dans le domaine profond, au-delà du rebord du plateau continental vers environ 100 m, la diversité des brachiopodes est maximale avec de fortes densités, pouvant atteindre plusieurs centaines d'individus au m<sup>2</sup> dans l'étage Bathyal supérieur. La liste des espèces est rangée selon la classification en vigueur, avec les principaux synonymes et la localité-type.

**Mots-clés** : Brachiopodes ; répartition géographique ; France métropolitaine ; Méditerranée ; Atlantique ; Manche

**Abstract** : In the French Exclusive Economic Zone (Atlantic Ocean) and Ecological Protection Zone (Mediterranean Sea), the brachiopods are all epibionts. The morphology and the anatomy of the adult are briefly described, as well as the main characteristics of their natural history. Their bathymetric distribution ranges between littoral to Bathyal zone. 27 species, referred to 22 genera, are listed with respectively 6 species in the Channel, 23 in the Atlantic Ocean and 11 in the Mediterranean Sea. The data on the geographical distribution of the brachiopods off the French coasts come almost exclusively from oceanographic expeditions. On the continental shelf, the brachiopods are generally cryptic, therefore not very easy to reach from the surface, requiring Scuba diving, their density is low and their size small, often less than one centimeter. On the other hand, in the deep-sea, beyond the shelf break at nearly 100 m, the diversity of the brachiopods is maximum with high densities, reaching several hundreds of individuals per square meter in the Upper Bathyal zone. The list of the species is given according to current classification, with the main synonyms, the type locality, and short remarks when required.

**Keywords** : Brachiopoda ; distribution ; continental France ; Mediterranean ; Atlantic ; Channel

## Introduction

Bien que le nom Brachiopode (du grec *brakhion* bras, *podos* pied : à qui des bras servent de pieds, Gattel, 1833) ait été proposé par Cuvier (1798), la classification des Brachiopoda a été faite pour la première fois par Duméril en 1805, qui les a placés au sein des Mollusques ; il les a définis comme des « Mollusques testacés sans tête, à tentacules ciliées, rentrant dans l'intérieur de la coquille qui est fixée » (voir Emig, 2012 : figure 22).

Les Brachiopodes sont un groupe benthique de lophophorates marins bivalves sessiles, attachés à un substrat dur ou en terrier dans un sédiment meuble, et suspensivores. Leur répartition bathymétrique s'étend depuis la zone intertidale jusque vers 6000 m de profondeur, mais préférentiellement dans l'étage Bathyal supérieur entre 100 et 500 m de profondeur (Emig,

1988a). Ils sont présents dans toutes les mers et océans.

Les Brachiopodes figurent parmi les plus vieux fossiles connus, depuis le Cambrien, il y a quelque 550 MA. Néanmoins, l'origine du groupe est estimée à environ un milliard d'années (Emig, 2008). Fort abondant et dominant au début du Paléozoïque, le nombre d'espèces a lentement décru à partir de la crise Permien-Trias ; en même temps ce sont les mollusques qui se sont rapidement diversifiés (figure 21). Aujourd'hui les brachiopodes sont représentés par 391 espèces réparties dans 116 genres (Emig *et al.*, 2013).

Dans la classification actuelle selon le *Treatise of Invertebrate Paleontology* (Kaesler, 1997, 2000a, 2000b, 2002, 2006 ; Selden, 2007), le phylum Brachiopoda se divise en trois sous-phylums : Linguliformea, Craniiformea qui auparavant formaient les Inarticulata (ou Inarticulés) et les Rhynchonelliformea, anciennement Articulata (ou Articulés). Ils sont tous les trois représentés dans les eaux marines françaises (Tableau 1).

Rares sont les synthèses sur la répartition des brachiopodes dans les eaux françaises métropolitaines, on ne peut que citer celles de Fischer *et al.* (1875), Fischer (1878), de Locard (1899) et récemment de Saiz-Salinas (1989), alors que le travail de Logan (1979) n'a concerné que la mer Méditerranée et encore avec une distribution géographique restreinte au matériel examiné. Si, en France, l'édition d'une faune de France complète n'a jamais abouti, cela ne fut pas le cas des pays riverains. Citons les brachiopodes dans *Synopses of the British Fauna* : Brunton & Curry (1979) ; *Fauna Ibérica* : Álvarez & Emig (2005) ; *Check-list della Fauna marina Italiana* : Emig (2010b). La présente synthèse comble ainsi un vide qu'il n'était que temps d'accomplir. A noter que nombre de données sont inédites, principalement en mer Méditerranée (données des campagnes de CNRS-RCP 728, 1983-1989 : Emig, 1988 b, 1988 c).

### **Morphologie et anatomie de l'adulte**

La **coquille** est un exosquelette bilatéral symétrique enfermant le corps de l'animal (figures 22, 23) : elle est formée par une valve dorsale et une valve ventrale, qui étaient antérieurement nommées respectivement valve brachiale et valve pédonculaire par les paléontologues. Sa taille varie de quelques millimètres à plus de 9 cm. Une nomenclature souvent complexe est utilisée pour décrire la coquille qui possède pratiquement les seuls caractères pour pouvoir identifier une espèce fossile. Elle est formée de deux ou trois couches, dont la composition varie selon les espèces, elle est généralement chitino-phosphatique dans les linguliformes, et calcitique dans les craniiformes et rhynchonelliformes.

Un **pédoncule**, sortant par le foramen de la valve ventrale, permet à l'animal de se fixer au substrat (figure 23). Sa structure varie selon les espèces. Néanmoins, le pédoncule est manquant chez les craniidés, dont la valve ventrale est cimentée sur un substrat dur ou encore le discinide *Pelagodiscus* qui se fixe par une paire de muscles à un substrat dur.

Le corps occupe une place plus ou moins importante à l'intérieur de la coquille (figure 23).

Le **lophophore** est une extension formée de tentacules, qui entoure la bouche, pas l'anus (voir Emig, 1992) ; ses fonctions sont dans la capture des particules alimentaires et dans la respiration grâce aux courants engendrés dans la coquille par les battements des cils des

tentacules (figure 23). La forme du lophophore des brachiopodes varie en complexité selon les espèces et au cours de la croissance (voir Emig, 1992) : trocholophe (2% des espèces vivantes) est un caractère primitif ; schizolophe (10 %) présent chez des térébratuloidés, théciidioidés et discinidés ; spirolophe (19%) chez des rhynchonellidés et chez la plupart des linguliformes et craniiformes ; zygo-plectolophe (67%) est caractéristique des térébratulidés ; ptycholophe (2%) chez *Megathiris* et des théciidioidés. Dans les stades complexes, le lophophore possède un support calcaire interne appelé brachidium, une excroissance de la valve dorsale.

Le **tube digestif**, en forme de U, comprend un œsophage, un estomac avec des glandes digestives ramifiées et un intestin avec un anus s'ouvrant dans la cavité lophophorale (ou cavité du manteau) chez les linguliformes et craniiformes, ou un intestin en cul de sac (sans anus) chez les Rhynchonelliformes (figure 23).

Le **cœlome** du corps (métacœlome) est la cavité interne s'étendant dans le manteau couvrant la face interne des valves (figure 23). Il communique avec l'extérieur, dans la cavité lophophorale, par le néphridiopore d'une ou deux paires de **métanéphridies** qui sont les organes excréteurs, ainsi que les **gonoductes**.

Le **système circulatoire** est ouvert à l'intérieur de la cavité cœlomique, dont le liquide, faisant office de sang, contient des pigments respiratoires (hémérythrine). Le vaisseau principal, médio-dorsal, possède une partie contractile servant de cœur. Des ramifications se prolongent dans le lophophore avec un capillaire dans chaque tentacule où le sang s'oxygène. Un ensemble de canaux se prolongent dans le manteau épidermique recouvrant les faces internes des valves.

Le **système nerveux**, basi-épithélial, est formé d'un collier circum-œsophagien avec un ganglion sous-œsophagien (ventral) et fréquemment aussi un petit ganglion supra-œsophagien (figure 23) : de là partent un ensemble de nerfs vers toutes les parties du corps. Les valves sont bordées par de nombreux et longs cils sensoriels : leur disposition empêche aussi l'introduction de particules non souhaitées.

Le **système musculaire** est principalement formé des muscles reliant les valves pour permettre les mouvements de la coquille et ceux liés au lophophore. Nombre de muscles dans les brachiopodes inarticulés interviennent dans l'ouverture et fermeture de la coquille et dans la rotation des valves (figure 23). Les articulés ne disposent que de muscles adducteurs et diducteurs et leur pédoncule possède un ensemble de muscles permettant les changements de position de la coquille.

Les **gonades** se développent dans la cavité cœlomique le long des mésentères et, chez les craniidés et les rhynchonelliformes, dans les canaux cœlomiques du manteau (figure 23). La majorité des espèces de brachiopodes sont dioïques, quelques-unes sont hermaphrodites. Les gamètes sont rejetés dans la cavité lophophorale à travers les métanéphridies. La fécondation est externe. Certaines espèces incubent les embryons jusqu'aux stades larvaires natatoires dans des métanéphridies modifiées, dans les tentacules du lophophore, dans la cavité lophophorale ou dans des chambres incubatrices. Deux types larvaires distincts existent : d'une part chez les linguliformes et d'autre part chez les craniiformes et les rhynchonelliformes et la durée du développement jusqu'à la métamorphose est de l'ordre de 3 semaines pour les premiers et entre quelques jours et une dizaine de jours chez les deuxièmes.

## Histoire naturelle des brachiopodes

Les brachiopodes sont un groupe marin benthique, suspensivore et épibionte, à l'exception de nombre de taxons linguliformes endobiontes fossiles, aujourd'hui seulement représentés par les genres *Lingula* et *Glottidia*. Les espèces de ces deux genres vivent dans des terriers verticaux ; plusieurs sont connues dans eaux françaises des Antilles et de Nouvelle-Calédonie (Emig, 1997a).

La distribution bathymétrique des brachiopodes est la plus abondante depuis les zones littorales jusque dans l'étage Bathyal supérieur (figure 24A) : elle s'explique par la nécessité d'être toujours soumis à un certain hydrodynamisme favorisant l'apport nutritionnel en particules alimentaires et en plancton. Le rebord du plateau continental est particulièrement favorable ce qui explique la prédominance de brachiopode, principalement craniiformes et rhynchonelliformes, dans cette zone du Bathyal supérieur (Emig, 1997b).

Leur distribution géographique s'étend dans tous les océans et mers ; néanmoins, dans l'actuel, la distribution latitudinale montre que les linguliformes, principalement littoraux, sont plus abondants dans la zone intertropicale (figure 24B), tandis que les rhynchonelliformes ont une plus large distribution dans les zones tempérées (figure 24C).

## Distribution et classification des brachiopodes

Notre connaissance de la répartition géographique des brachiopodes le long et au large des côtes françaises est presque exclusivement liée aux résultats de campagnes océanographiques. En effet, sur le plateau continental, les brachiopodes sont généralement cryptiques, donc peu accessibles depuis la surface, mais en plongée en scaphandre autonome, d'autant que leur densité est faible et leur taille petite, souvent moins d'un centimètre. En revanche, dans le domaine profond, au-delà du rebord du plateau continental vers environ 100 m, la diversité des brachiopodes est maximale avec de fortes densités, plusieurs centaines d'individus au m<sup>2</sup> dans l'étage Bathyal supérieur (Emig, 1985, 1988a, 1997b).

En Manche, les signalisations sont littorales. Dans l'océan Atlantique, outre quelques récoltes littorales, les données proviennent de campagnes océanographiques françaises faites depuis plus d'un siècle, notamment par le Ministère de l'Instruction publique, par l'Ifremer et par le Prince Albert I<sup>er</sup> de Monaco ; la distribution a été étendue aux données de ces campagnes obtenues au large des côtes françaises et espagnoles (figure 25-30 : grands rectangles rouges).

En mer Méditerranée, la proximité de la pente continentale a facilité les dragages profonds et les plongées en submersible sur les fonds à brachiopodes à partir du Laboratoire Arago (Banyuls) et de la Station Marine d'Endoume (Marseille). Les campagnes au large des côtes provençales et autour de la Corse ont été menées entre 1983 et 1989 dans le cadre de la Recherche Coopérative sur Programme (CNRS) 728 (*Etudes des populations actuelles de brachiopodes; transposition aux formes fossiles*) : pour les cahiers de stations voir Emig (1988b, 1988c) ; les résultats ont fait l'objet de nombreuses publications.

	Manche	Atlantique	Méditerranée		Bathymétrie (en m)
<i>Acrobelesia cooperi</i>				R-terebratul	330 - 1000
<i>Argyrotheca cistellula</i>				R-terebratell	5 - 236
<i>Argyrotheca cuneata</i>				R-terebratell	5 - 645
<i>Cryptopora gnomon</i>				R-rhync	300 - 5950
<i>Dallina parva</i>				R-terebratell	860 - 910
<i>Dallina septigera</i>				R-terebratell	37 - 2338
<i>Dyscolia subquadrata</i>				R-terebratul	550 - 1179
<i>Dyscolia wyvillei</i>				R-terebratul	73 - 1927
<i>Eucalathis ergastica</i>				R-terebratul	280 - 2736
<i>Eucalathis trigona</i>				R-terebratul	909-1834
<i>Eucalathis tuberata</i>				R-terebratul	549 - 2995
<i>Fallax dalliniformis</i>				R-terebratul	219 - 1421
<i>Gryphus vitreus</i>				R-terebratul	78 - 2678
<i>Gwynia capsula</i>				R-incertain	0 - 800
<i>Hispanirhynchia cornea</i>				R-rhync	439 - 2388
<i>Joania cordata</i>				R-terebratell	3 - 600
<i>Lacazella mediterranea</i>		?		R-thec	1 - 110
<i>Macandrevia cranium</i>				R-terebratell	9 - 2951
<i>Megathiris detruncata</i>				R-terebratell	5 - 896
<i>Megerlia truncata</i>				R-terebratell	10 - 1970
<i>Novocrania anomala</i>				C	quelques m - 1478
? <i>Pajaudina atlantica</i>				R-thec	10 - 50
<i>Pelagodiscus atlanticus</i>				L	336 - 5530 m
<i>Platidia anomioides</i>				R-terebratell	8 - 2190
<i>Stenosarina sphenoides</i>		*		R-terebratul	255 - 2220
<i>Terebratulina retusa</i>				R-terebratul	9 - 3614
<i>Tethyrhynchia mediterranea</i>				R-rhync	3 - 40

Tableau 1. Liste alphabétique des brachiopodes des côtes françaises métropolitaines, avec l'intervalle bathymétrique connu pour chaque espèce. C = Craniida ; L = Lingulida ; R = Rhynchonellata ; rhync = Rhynchonellida ; thec = Thecideida ; terebratul = Terebratulidae ; terebratell = Terebratellidae. ? il pourrait s'agir de *Pajaudina atlantica*. \* la forme actuelle a été redécrite sous *Stenosarina davidsoni* par Logan (1998).

La classification, proposée ci-dessous, est basée sur celle du *Treatise of Invertebrate Paleontology* (Kaesler, 1997, 2000a, 2000b, 2002, 2006 ; Selden, 2007), avec les modifications intervenues récemment (Emig *et al.*, 2013 ; Emig *et al.*, 2016). Pour la description des espèces citées ici, le lecteur est renvoyé à la récente publication d'Álvarez & Emig (2005). Il faut remarquer que P. Fischer et D.-P. Œhlert sont les auteurs de deux genres encore en vigueur : *Dyscolia* Fischer et Œhlert, 1890 et *Eucalathis* Fischer et Œhlert, 1890 et d'une espèce *Megerlia echinata* (Fischer et Œhlert, 1891) maintenant en synonymie avec *M. truncata*. Seules les principales synonymies sont indiquées.

Phylum Brachiopoda Duméril, 1805

Linguliformea	C. Lingulata	O. Lingulida	SF. Discinoidea	F. Discinidae	s/F. Disciniscinae
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*Pelagodiscus* Dall, 1908 (figure 25)

***Pelagodiscus atlanticus*** (King, 1868) [*Discina atlantica* King, 1868, p. 170-175]

*Pelagodiscus atlanticus* : Dall (1908)

Localité-type : W de la Baie Donnegal (Irlande) : st. 19a (52°8'W, 15°30'N, 2268 m), Campagne « Porcupine » 1869. Espèce à large distribution, de l'Arctique à l'Antarctique.

Craniiformea	C. Craniata	O. Craniida	SF. Cranioidea	F. Craniidae
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*Novocrania* Lee et Brunton, 2001 (figure 25)

Synonymes : *Criopus* Poli, 1791 ; *Criopoderma* Poli, 1795 ; *Orbicula* Cuvier, 1798 ; *Orbicularius* Duméril, 1805. *Cryopus* Deshayes, 1836 ; *Criopododerma* Agassiz, 1846 ; *Neocrania* Lee et Brunton, 1986.

***Novocrania anomala*** (Müller, 1776) [*Patella anomala* Müller, 1776]

Synonymes : *Anomia turbinata* Poli, 1795 ; *Orbicula anomala* : Cuvier (1798) ; *Orbicula norwegica* Lamarck, 1801 ; *Criopus anomalus* : Fleming (1822) ; *Anomia norwegica* : Wood (1828) ; *Crania anomala* : Lovén (1846) ; *Neocrania anomala* : Lee et Brunton (1986).

Localité-type : Hår-Krøllen (Danemark).

*Novocrania turbinata* (Poli, 1795), décrite dans l'étage Bathyal des eaux du Royaume des Deux-Siciles (Italie), est synonyme de *N. anomala*, comme récemment démontré par Emig (2014a).

Rhynchonelliformea	C. Rhynchonellata	O. Rhynchonellida
	SF. Dimerelloidea	F. Cryptoporidae

*Cryptopora* Jeffreys, 1869 (figure 25)

Synonyme : *Atrelia* Jeffreys, 1870

***Cryptopora gnomon*** Jeffreys, 1869

Synonymes : *Atretia gnomon* : Jeffreys (1870) ; *Neatrelia gnomon* : Fischer & Ehlert (1891).

Localité-type : W de la baie Donegal (Irlande) : st. 20 (55°11'N, 11°31'W, 2639 m ; st. 30 : 56°24'N, 11°49'W, 2524 m), Campagne « Porcupine ». Espèce à large distribution, de l'Arctique à l'Antarctique.



SF. Norelloidea	F. Frieleiidae	s/F. Hispanirhynchiinae
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*Hispanirhynchia* Thomson, 1927 (figure 25)

***Hispanirhynchia cornea*** (Fischer in Davidson, 1887) [*Rhynchonella cornea* Fischer in Davidson, 1887]

Synonyme : *Hemithyris cornea* : Dall (1920)

Localité-type : W de Mogador (aujourd'hui Essaouira, Maroc), dragage 38, 27 juin 1883, 1050 m, Campagne du « Talisman » (Fischer & Cœhlert, 1891).

Cette localité mentionnée par Davidson (1886, p. 172) est « dredged off Cape St. Vincent (Talisman Expedition), depth 57½ fathoms » (=105 m). Fischer & Cœhlert (1891) ne mentionnent pour la récolte de *H. cornea* aucune station de dragage au large du Portugal par « Le Talisman » sinon deux stations de dragage entre la Maroc et les Canaries : dragage 53 (26 juin 1883), 1180 m ; dragage 53 (27 juin 1883), 865 m. Ils citent aussi le dragage 1 (13 juin 1881), 2018, au large du cap Finistère par le « Travailleur ». On peut suggérer une erreur de la part de Davidson dans la localisation, ainsi que sur la profondeur 105 m selon lui et 1050 m par Fischer & Cœhlert (1891). En conséquence, la localité-type est attribuée à la première récolte de *H. cornea* lors d'une campagne du « Talisman ». La description originale sous « *Rhynchonella (Hemithyris) cornea* P. Fischer » a été faite par Fischer & Cœhlert (1891, p. 13). Certains auteurs ont attribué la paternité à Davidson (1886) qui lui-même l'indique pourtant sous P. Fischer suite au courrier reçu de ce dernier.

F. Tethyrhynchiidae
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*Tethyrhynchia* Logan, 1994 (in Logan & Zibrowius 1994) (figure 25)

***Tethyrhynchia mediterranea*** Logan, 1994 (in Logan & Zibrowius 1994)

Localité-type : grotte sous-marine Trois-Pépés (La Ciotat, France), 21 m.

Rhynchonelliformea	C. Rhynchonellata	O. Thecideida
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SF. Thecideoidea	F. Thecideidae	s/F. Lacazellinae
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*Lacazella* Munier-Chalmas, 1881 (figure 25)

***Lacazella mediterranea*** (Risso, 1826) [*Thecidea mediterranea* Risso, 1826]

*Thecidium mediterraneum* : Lacaze-Duthiers (1861) ; *Terebratula (Thecidea) mediterranea* (Risso) : Reeve (1861).

Synonyme : *Thecidea spondylea* Scacchi, 1836

Localité-type : environ de Nice (France).

? ***Pajaudina atlantica*** Logan, 1988 (figure 25)

Si en mer Méditerranée, il s'agit bien de *Lacazella mediterranea*, le doute subsiste pour la signalisation faite par Fischer *et al.* (1875, p. 25) dans l'Ouest de la balise du Capbreton (Canyon de Capbreton, golfe de Gascogne) : « Un fragment de *Thecidea mediterranea*, brachiopode que l'on a cru longtemps spécial à la Méditerranée, nous permet d'espérer la rencontre de l'animal vivant. » En effet, selon Logan (1988b), la thécidée de l'Atlantique est *Pajaudina atlantica*.

Rhynchonelliformea	C. Rhynchonellata	O. Terebratulida	s/O. Terebratulidina
SF. Terebratuloidea	F. Terebratulidae	s/F. Gryphinae	

*Gryphus* Megerle von Mühlfeldt, 1811 (figure 26)

Synonymes : *Liothyris* Douvillé, 1880 (non Conrad 1875) ; *Liothyrina* Cehlert, 1887

***Gryphus vitreus*** (Born, 1778) [*Anomia vitrea* Born, 1778]

Synonymes : *Terebratula minor* Philippi, 1836 – forme fossile pliocène (Tertiaire) ; *Terebratula affinis* Carus (1893) ; *Terebratula vitrea* : Lamarck (1801) ; *Eurysina minor* : Cooper (1983).

Localité-type: Port-Mahon, Minorque (Iles Baléares, Espagne).

La distribution de cette espèce a fait l'objet de recherches intensives tant le long des côtes de Provence que de Corse (Emig, 1989). Des récoltes récentes faites par J. Martin (Ifremer, Nantes) (Martin, 2011) et par A. Jadaud (Ifremer, Sète) ont été obtenues lors des campagnes « Evhoe » 1995, 2008-2011, 2013 et « Langolf » 2011 en Atlantique et « Medits » 2012-2014 en Méditerranée.

SF. Terebratuloidea	F. Terebratulidae	s/F. Dallithyridinae
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*Stenosarina* Cooper, 1977 (figure 26)

***Stenosarina sphenoidea*** Philippi, 1844.

Synonymes : *Terebratula sphenoidea* Philippi, 1844 ; *Terebratula vitrea* var. *sphenoidea* Jeffreys, 1878 ; *Liothyris sphenoidea* : Davidson (1886) ; *Liothyrina sphenoidea* : Blochmann (1908) ; *Dallithyris sphenoidea* : Muir-Wood (1959) ; *Stenosarina sphenoidea* : Logan (1988) ; *Stenosarina davidsoni* Logan, 1998.

*Stenosarina crosnieri* Gaspard, 2003 (non Cooper, 1983)

Localité-type : Valle Lamati (infra Tiriolo) legi, Calabre, Italie - forme fossile du Pliocène (Tertiaire) ; Atlantis seamont : DW 258 (33°59'N, 30°124W, 420-460 m), Campagne Seamont 2 (1993) - forme actuelle d'après Logan (1998) sous *S. davidsoni*.

Dans un travail personnel en cours sur trois espèces fossiles décrites par Philippi (1844), celles-ci, dont *Terebratula sphenoidea*, ont encore des représentants actuels comme l'atteste leurs caractères taxinomiques, et ce contrairement à l'avis de quelques auteurs anglophones qui

n'ont, semble-t-il, pas consulté les travaux des paléontologues italiens. La position générique de *Stenosarina sphenoidea* fait encore débat, car cette espèce a parfois été confondue avec *Tichosina cubensis*, genres et espèces pourraient s'avérer synonymes.

Leur révision est en cours, mais indubitablement forme fossile et forme actuelle appartiennent à la même espèce d'après les figures et les descriptions de divers auteurs, ce que Logan (1998) met en doute sans justificatif. Cet auteur ne fournit pas non plus une diagnose de *S. sphenoidea*, pourtant obligatoire car exigée par le Code International de Nomenclature Zoologique.

SF. Dyscolioidea	F. Dyscoliidae	s/F. Dyscoliinae
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*Dyscolia* Fischer et Ehlert, 1890 (figure 26)

***Dyscolia wyvilli*** (Davidson, 1878) [*Terebratulina wyvilli* Davidson, 1878]

Localité-type : Ile Culebra (Petites-Antilles, USA), 713 m, Challenger Expédition.

***Dyscolia subquadrata*** (Jeffreys, 1878) [*Terebratula subquadrata* Jeffreys, 1878]

*Liothyris subquadrata* : Davidson (1886).

*Gryphus subquadratus* : Dall (1920).

Localité-type : au large du Portugal, 900-1100 m.

SF. Dyscolioidea	F. Dyscoliidae	s/F. Aenigmathyridinae
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*Acrobelesia* Cooper, 1983 (figure 26)

***Acrobelesia cooperi*** (d'Hondt, 1976) [*Gryphus cooperi* d'Hondt, 1976]

Localité-type : D'Hondt (1976) ne fournit qu'une liste des stations de récoltes sans aucune indication sur celle se référant à l'holotype. Nous indiquerons comme telle la première des localités citées : Station T 503 (44°00.7'N, 7°06.9'W, 490 m), Campagne du N/O Thalassa, golfe de Gascogne.

SF. Cancellothyridoidea	F. Cancellothyrididae	s/F. Cancellothyridinae
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*Terebratulina* d'Orbigny, 1847 (figure 27)

***Terebratulina retusa*** (Linné, 1758) [*Anomia retusa* Linné, 1758]

Synonymes : *Anomia caput-serpentis* Linné, 1767 (non Linné, 1758) ; *Terebratula caputserpentis* : Retzius (1788) ; *Criopoderma caput serpentis* : Poli (1795) ; *Terebratulina caput-serpentis* : d'Orbigny (1847).

*Terebratula emarginata* Risso, 1826.

De récentes erreurs apparues dans des bases de données en ligne et dans des collections de muséums ont nécessité une mise au point notamment sur *Terebratulina caputserpentis*

par Emig *et al.* (2016), avec une franche mise en garde dans l'usage scientifique des bases de données en ligne en biodiversité.

Localité-type : Linné (1767) mentionne p. 1151 : « *Habitat en pelago Norvegico* » et p. 1153 pour *caput-serpentis* : « *Habitat en abyssu M. Norvegici* ».

A noter que sur le plateau de Rochebonne, au large de la Rochelle (Vendée), entre 60 et 110 m de profondeur sur des fonds rocheux, cette espèce avec *Megerlia truncata* dépassent des densités de 20 individus par m<sup>-2</sup> (Gruet *et al.*, 2011 ; Agence des Aires marines Protégées 2013). Des données récentes fournies par J. Martin (Ifremer, Nantes) ont été obtenues lors de la campagne « Evhoe » 2009 et 2013 en Atlantique (Martin, 2011).

SF. Cancellothyridoidea	F. Chlidonophoridae	s/F. Eucalathinae
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*Eucalathis* Fischer et Cehlert, 1890 (figure 27)

***Eucalathis ergastica*** Fischer et Cehlert, 1890.

Localité-type : Les auteurs ne fournissent pas de localité précise, sinon : Côtes occidentales d'Espagne, du Maroc et du Soudan – Profondeur 640-2018 mètres (Expéditions du « Travailleur », 1881, du « Talisman », 1883).

***Eucalathis trigona*** (Jeffreys, 1878) [*Terebratula trigona* Jeffreys, 1878]

Localité-type : au large des côtes du Portugal vers 500 fathoms.

***Eucalathis tuberala*** (Jeffreys, 1878) [*Terebratula tuberala* Jeffreys, 1878]

*Terebratulina tuberala* : Davidson (1886).

Localité-type : Banc Joséphine (vers 36°45'N, 14°15'W, 612-774 m), Campagne « Porcupine » 1870.

Rhynchonelliformea	C. Rhynchonellata	O. Terebratulida	s/O. Terebratellidina
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SF. Zeillerioidea	F. Zeilleriidae	s/F. Macandreviinae
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*Macandrevia* King, 1859 (figure 28)

Synonymes : *Frenula* Dall, 1871 ; *Waldheimiathyris* Helmcke, 1939.

***Macandrevia cranium*** (Müller, 1776) [*Terebratula cranium* Müller, 1776]

Synonymes : *Anomia cranium* : Gmelin (1791) ; *Waldheimia cranium* : Gray (1853) ; *Magellania cranium* Fischer et Cehlert, 1891.

*Macandrevia euthrya* Philippi, 1844

*Terebratula glabra* Leach, 1852

*Frenula jeffreysi* (ex parte) Dall, 1871

*Macandrevia cranium* var. *novangliae* Dall, 1920

Localité-type : Scandinavie – pas de donnée précise - voir Müller (1776, p. 249 - n° 3006)

SF. Kingenoidea	F. Aulacothyropsidae	s/F. Babukellinae
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*Fallax* Alkins, 1960 (figure 28)

***Fallax dalliniformis*** Atkins, 1960

Localité-type : Approches Occidentales de la Manche (48°33'N, 10°01'W, 1061-1244 m).

SF. Megathyridoidea	F. Megathyrididae
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*Megathiris* d'Orbigny, 1847 (figure 28)

Synonymes : *Argiope* Eudes-Deslongchamps, 1842 ; *Megathiris* Bronn, 1848 ; *Argyope* Davidson, 1850.

***Megathiris detruncata*** (Gmelin, 1791) [*Anomia detruncata* Gmelin, 1791]

Synonymes : *Anomia decollata* Chemnitz, 1785 ; *Terebratula aperta* Blainville, 1828 ; *Terebratula dimidiata* Scacchi, 1833

Localité-type : « *Habitat in mari mediterraneo, coralliis adhaerens* » d'après Gmelin (1791).

*Argyrotheca* Dall, 1900 (figure 29)

Synonyme : *Cistella* Gray, 1853

***Argyrotheca cuneata*** Risso, 1826 [*Terebratula cuneata* Risso, 1826]

*Cistella cuneata* : Gray (1853) ; *Argiope cuneata* : Jeffreys (1878) ; *Argyrotheca cuneata* : Dall (1920).

Localité-type : environ de Nice (France).

***Argyrotheca cistellula*** (Wood, 1841) [*Terebratula cistellula* Wood, 1841]

Synonymes : *Megathiris cistellula* Forbes et Hanley, 1849.

*Cistella cistellula* : Gray (1853) ; *Argiope cistellula* : Jeffreys (1878).

Localité-type : Formation Crag à Sutton (Suffolk, Grande-Bretagne) [forme pliocène]

*Joania* Álvarez, Brunton et Long, 2008 (figure 29)

***Joania cordata*** (Risso, 1826) [*Terebratula cordata* Risso, 1826]

Synonymes : *Terebratula neapolitana* Scacchi, 1833 (non Delle Chiaje, 1830) ; *Orthis neapolitana*

Philippi, 1844 ; *Argiope biplicata* Seguenza, 1876 ; *Argiope neapolitana* : Jeffreys (1878) ; *Argiope kowalevskii* Schulgdin, 1884 ; *Cistella neapolitana* : Davidson (1887).

Localité-type : environ de Nice (France).

SF. Platidioidea	F. Platidiidae	s/F. Platidiinae
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*Platidia* Costa, 1852 (figure 30)

Synonymes : *Morrisia* Davidson, 1852 ; *Platydia* Davidson, 1887.

***Platidia anomioides*** (Scacchi et Philippi, 1844, in Philippi, 1844) [*Orthis anomioides* Scacchi et Philippi, 1844, in Philippi, 1844]

Synonymes : *Terebratula appressa* Forbes, 1844 ; *Morrisia anomioides* : Davidson (1852) ; *Morrisia davidsoni* Eudes-Deslongchamps, 1855 ; *Platidia davidsoni* Dall, 1870.

Localité-type : eaux marines siciliennes.

*Platidia davidsoni* est considérée comme synonyme de *P. anomioides*. Car, les deux espèces cohabitent notamment en mer Méditerranée et leur aspect externe est identique. Certains auteurs n'ont utilisé qu'une largeur de la coquille légèrement plus grande pour *P. davidsoni* et la présence de nombreuses petites pustules sur la valve ventrale d'après des caractères suggérés par Cooper (1973b), Brunton & Curry (1979), pour distinguer ces espèces. Or, Logan (1979), rejetant les arguments de Cooper, ne trouve qu'un seul critère pouvant distinguer les deux espèces, à savoir que le support brachial à un stade plus avancé de développement chez *P. anomioides* que chez *P. davidsoni* ; ceci a déjà été souligné par Davidson (1886) en mentionnant la similitude des deux espèces. Aussi, en l'absence d'une étude sur les variations de ce support et de son caractère phylogénétique indéniable, prouvant qu'un stade de développement du brachidium peut être un caractère taxinomique constant, *P. davidsoni* est traité comme synonyme de *P. anomioides*. Logan (1979) précise : « As *P. davidsoni* represents merely a less advanced state of development of the brachial support than in adult *P. anomioides*, no new genus has been created for its reception at the present time. » Enfin, beaucoup de localisations sont sujettes à caution, car les auteurs ont attribué leurs exemplaires à l'une ou l'autre des espèces en fonction d'observations subjectives. Le cas de ces deux espèces est proche de celui de *Novocrania anomala* (voir Emig, 2014b).

SF. Terebratelloidea	F. Dallinidae	s/F. Dallininae
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*Dallina* Beecher, 1893 (figure 30)

***Dallina septigera*** (Lovén, 1845) [*Terebratula septigera* Lovén, 1845]

Synonymes : *Waldheimia septigera* : Gray et Woodward (1852) ; *Magellania septigera* : Fischer et Ehlert (1891).

Localité-type : Finmark (Norvège)

***Dallina parva*** Cooper, 1981

Localité-type : Station X 340 (44°07.0'N, 04°29.8'W, 860-910 m), Campagne du N/O Thalassa 1971.

SF. Kraussinoidea	F. Kraussinidae
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*Megerlia* King, 1850 (figure 30)

Synonymes : *Mühlfeldtia* Bayle, 1880 ; *Megerlia* Filhol, 1885 ; *Megerlia* Brazier, 1889 ; *Pantellaria* Dall, 1919.

***Megerlia truncata*** (Linné, 1767) [*Anomia truncata* Linné, 1767]

Synonymes : *Terebratula truncata* : Retzius (1788) ; *Criopoderma truncatum* : Poli (1795) ; *Mühlfeldtia truncata* : Fischer et Ehlert (1891).

*Mühlfeldtia disculus* : Dall (1920) (non Pallas 1766)

*Terebratula monstrosa* Scacchi, 1833 ; *Megerlia truncata* var. *monstrosa* : Montecristo (1875) ; *Mühlfeldtia monstrosa* Fischer et Ehlert, 1891 ; *Pantellaria monstrosa* : Dall (1920).

*Megerlia gigantea* (Deshayes, 1863)

*Megerlia echinata* (Fischer et Ehlert, 1890)

Localité-type : « *Habitat in Pelago Norvegico supra corallin* »

Voir aussi note à *Terebratulina retusa*. Des données récentes fournies par J. Martin (Ifremer, Nantes) ont été obtenues lors de la campagne « Langolf » 2011 en Atlantique (Martin, 2011).

Rhynchonelliformea	C. Rhynchonellata	O. Terebratulida	s/O. Incertain	SF. Gwynioidea
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*Gwynia* King, 1859 (figure 30)

***Gwynia capsula*** (Jeffreys, 1859) [*Terebratula capsula* Jeffreys, 1859]

Localité type : le genre a été décrit par King (1859) d'un exemplaire récolté par Jeffreys à Etretat, Normandie (France), tandis que l'espèce l'a été par Jeffreys (1859) à partir d'une récolte à Belfast Lough, nom de la baie de Belfast (Irlande).

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67-75. *In*: MIRONOV A. N., GEBRUK A. V. & SOUTHWARD A. J. (eds), Biogeography of the North Atlantic seamounts. Russian Academy Nauk, P. P. Shirshov Institute of Oceanology, KMK Scientific, Moscow, 196 p.



# FIGURES HORS-TEXTE / INSET FIGURES





Figure 1 : Portrait de Pauline et Daniel Cehlert.

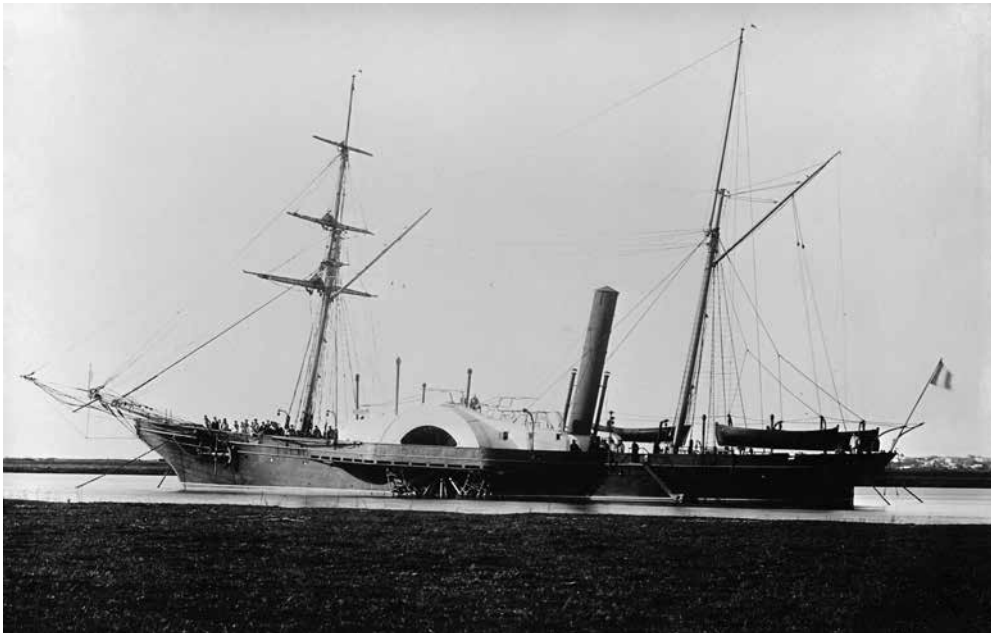


Figure 2 : Le *Travailleur*, aviso à roues, © Musée national de la Marine/ A. Fux (ref. PH 10316 Scan).



Figure 3 : Localisation des dragages effectués par le *Travailleur* en 1880 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **9** : Golfe de Gascogne, **10** : Nord de l'Espagne, **22** : Fosse du Capbreton. Le double grand cercle correspond à une localisation approximative de la station de dragage, le double petit cercle à une localisation un peu plus précise. Fischer & Cœhlert n'indiquent pas dans leurs publications les coordonnées géographiques des stations.

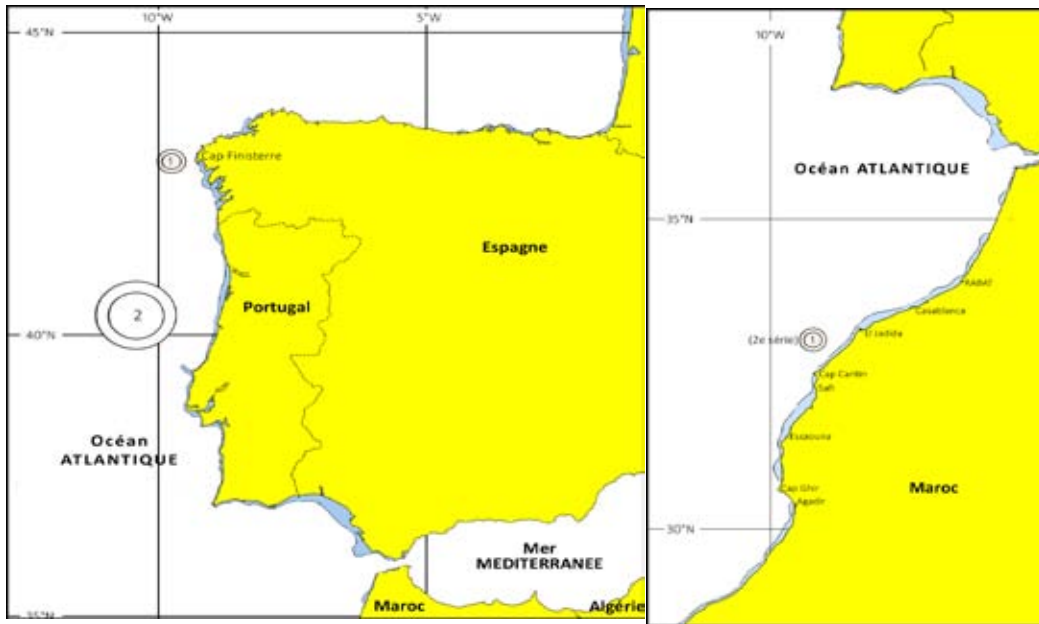


Figure 4 : Localisation des dragages effectués par le *Travailleur* en juin 1881 (première mission de l'année 1881) au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **1** : Au large du Cap Finisterre, **2** : Côtes du Portugal, **1 (2<sup>e</sup> série)** : Cap Blanc (Maroc)<sup>1</sup>. Voir légende Figure 3.

<sup>1</sup> Il ne faut pas confondre ce cap nommé cap Blanc du Nord, situé a quelques milles d'El Jadida au Maroc, avec le cap Blanc (ou Ras Nouadhibou) situé entre la Mauritanie (au Sud) et le Sahara occidental (au Nord).



Figure 5 : Localisation des dragages effectués par le *Travailleur* en juillet et août 1881 (seconde mission de 1881) au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **1** : Golfe du Lion, **3, 5, 9** : Méditerranée, **19** : Corse, **37, 39, 40** : Nord de l'Espagne, **42** : Nord de l'Espagne-Golfe de Gascogne. Voir légende Figure 3.



Figure 6 : Localisation des dragages effectués par le *Travailleur* en 1882 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **1** et **2** : Golfe de Gascogne, **3** et **8** : Nord de l'Espagne-Golfe de Gascogne, **12** : Golfe de Gascogne, **70** : Golfe de Gascogne. Voir légende Figure 3.



Figure 7 : Localisation des dragages effectués par le *Travailleur* en 1882 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **19** : Côtes du Portugal, **21** et **22** : Iles Farihões, **32** : Golfe de Cadix, Sud de l'Espagne, **58** : Côtes du Portugal. Voir légende Figure 3.



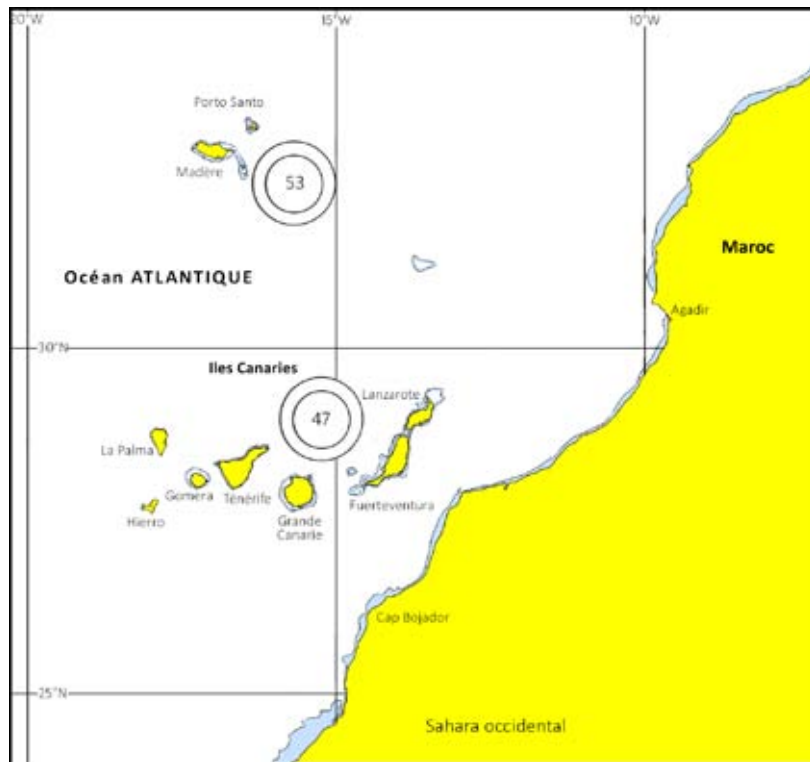


Figure 8 : Localisation des dragages effectués par le *Travailleur* en 1882 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **47** : Iles Canaries, **53** : Parages des Iles Désertes (archipel de Madère). Voir légende Figure 3.

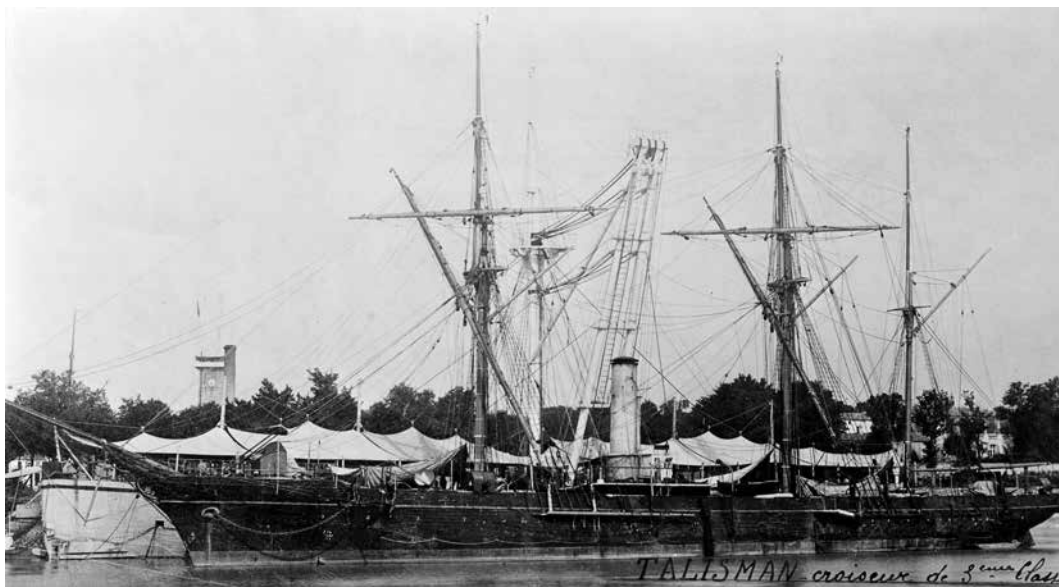


Figure 9 : Le *Talisman*, aviso, 1862 © Musée national de la Marine/A. Fux (ref. PH 7652 Scan).

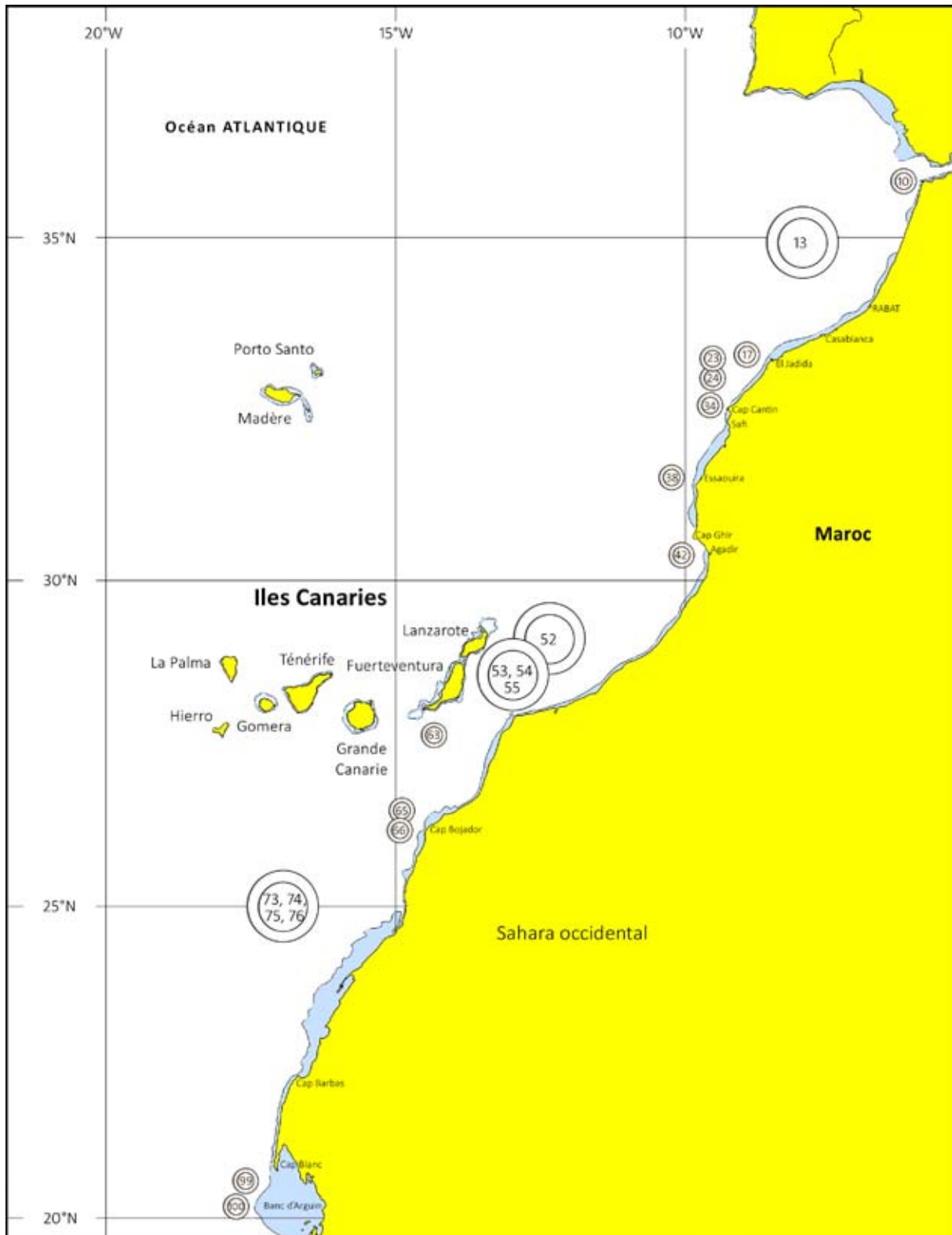


Figure 10 : Localisation des dragages effectués par le *Talisman* en 1883 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **10** : Cap Spartel, **13** : Côtes du Maroc, **17** : au large de Mazaghan (El Jadida), **23** et **24** : Cap Blanc<sup>1</sup>, **34** : Cap Cantin, **38** : au large de Mogador (Essaouira), **42** : au large d'Agadir, **52** : Entre les

îles Canaries et le Maroc, **53**, **54** et **55** : Parages des îles Canaries, **63** : au Sud de Fuerteventura, **65** et **66** : Cap Bojador (= Cap Boujdour), **73**, **74**, **75** et **76** : Côtes du Soudan (*Fischer et Ehlert appliquent la définition des hydrographes : «côtes du Soudan» correspond au littoral occidental de l'Afrique, depuis le Cap Bojador au nord jusqu'au Cap Vert et au large de Dakar au sud - voir Figure 11*), **99** et **100** : au large du banc d'Arguin, **156** : Golfe de Gascogne. Voir légende Figure 3.

<sup>1</sup> Il ne faut pas confondre ce cap nommé cap Blanc du Nord, situé à quelques milles au Sud d'El Jadida au Maroc, avec le cap Blanc (ou Ras Nouadhibou) situé entre la Mauritanie (au Sud) et le Sahara occidental (au Nord).

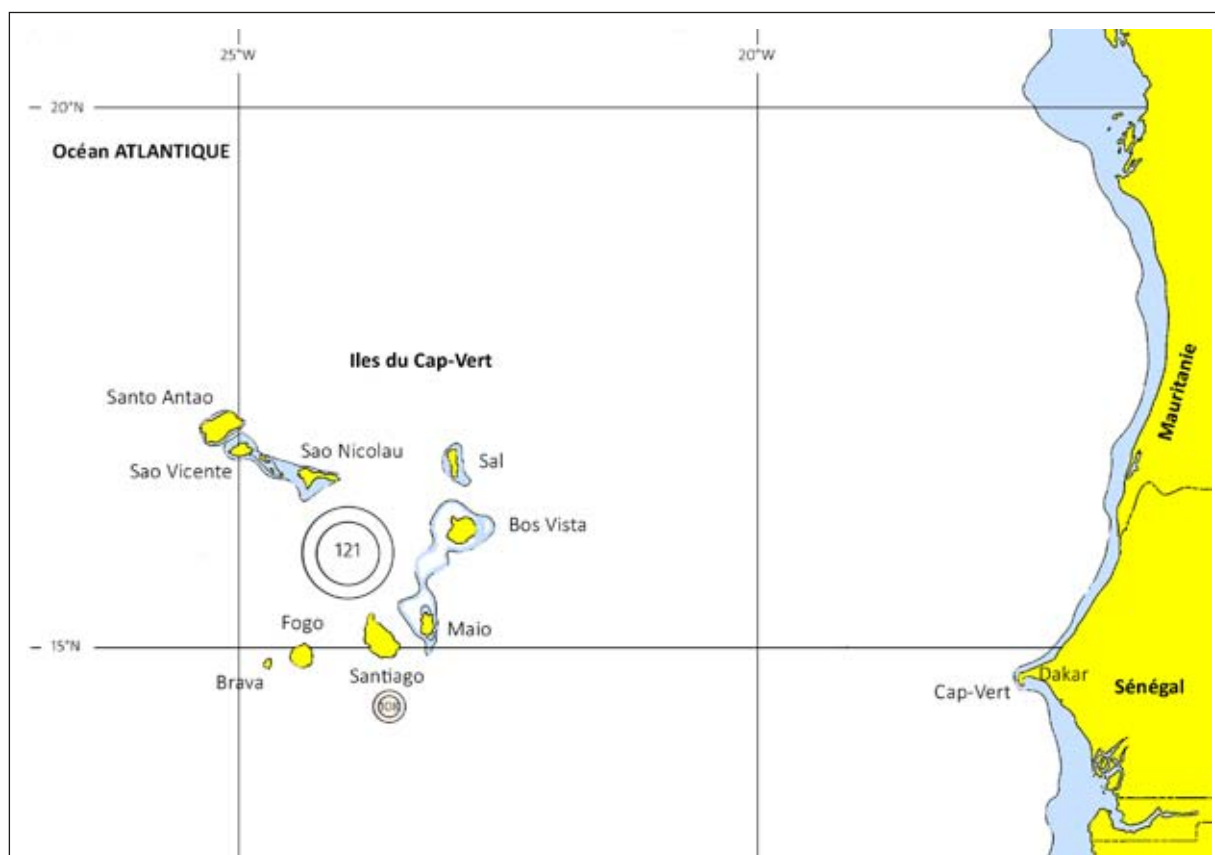


Figure 11 : Localisation des dragages effectués par le *Talisman* en 1883 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages : **108** : La Praia (au sud de l'île Santiago), **121** : Îles du Cap Vert. Voir légende Figure 3.

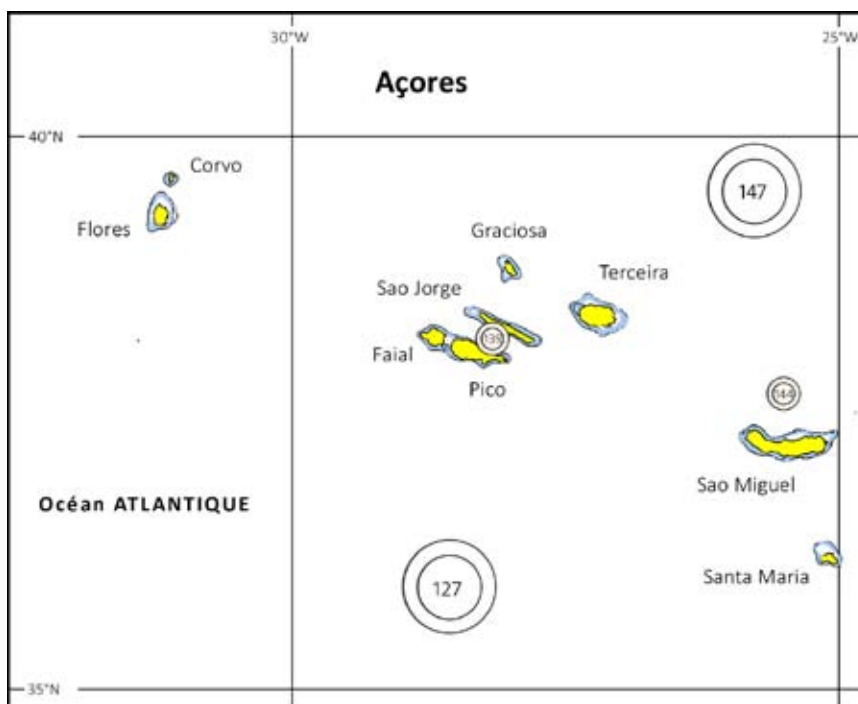


Figure 12 : Localisation des dragages effectués par le *Talisman* en 1883 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **127** : Au Sud de l'archipel des Açores, **139** : Entre Pico et Sao Jorge, **144** : Au Nord de Sao Miguel, **147** : Au Nord de l'archipel des Açores. Voir légende Figure 3.

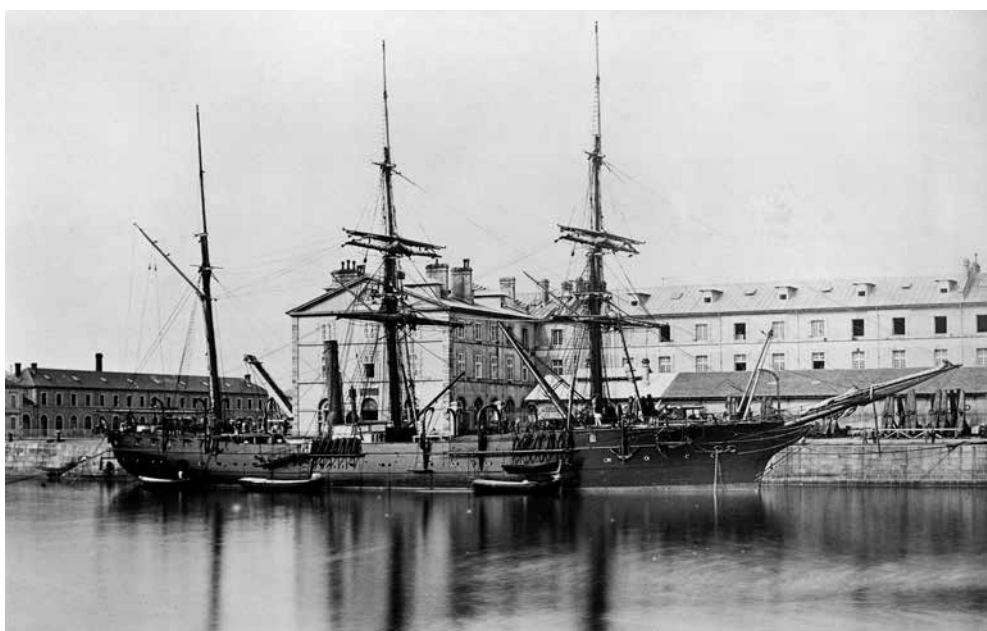


Figure 13 : *La Romanche*, aviso transport, le 24 juin 1882 © Musée national de la Marine/A. Fux (ref. PH 173098 Scan).

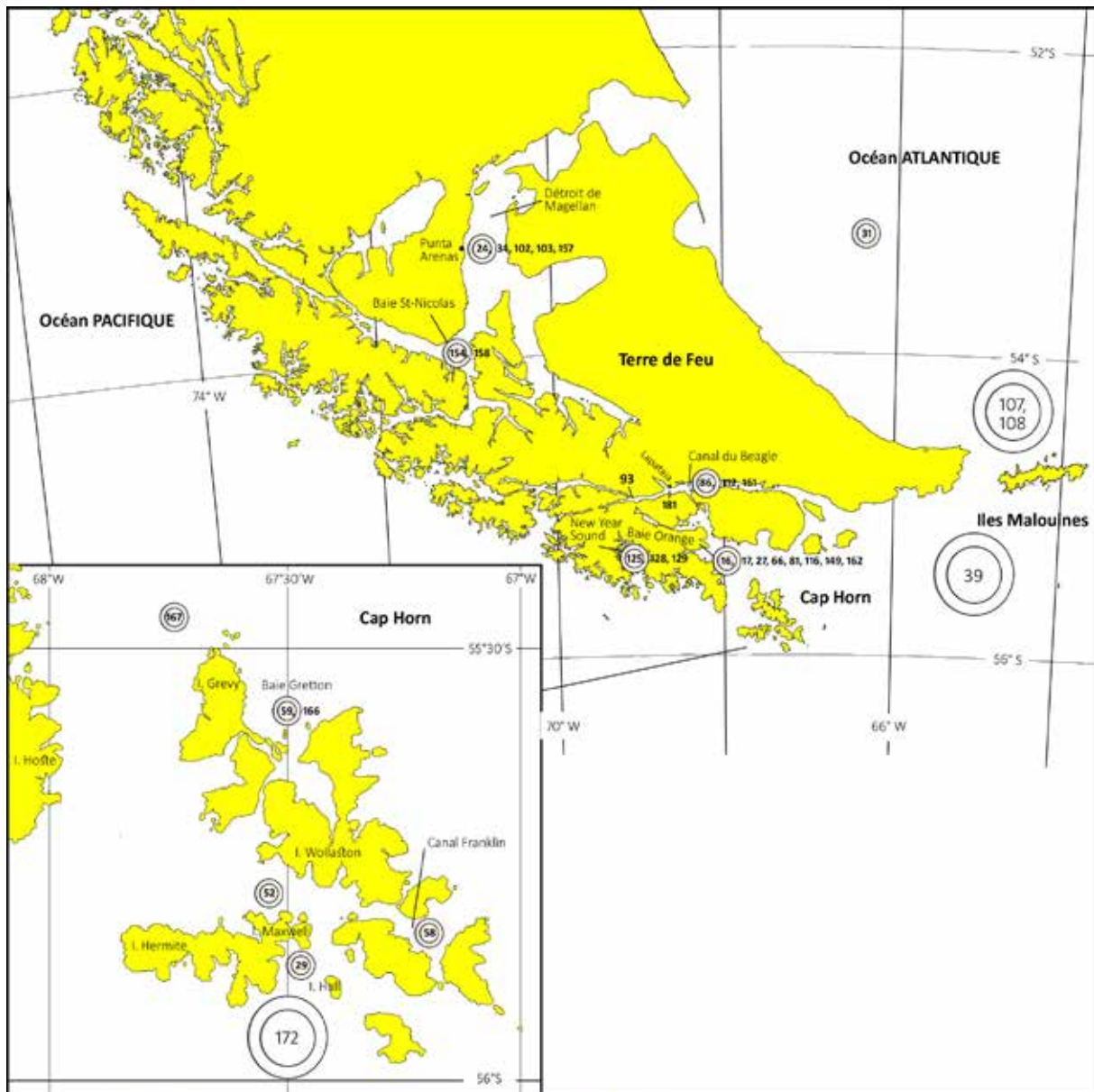


Figure 14 : Localisation des principales stations de dragages effectués par *La Romanche* en 1882 et 1883 au cours desquels des brachiopodes actuels ont été récoltés. **4** : 67°36'W<sup>1</sup>, 50°52'S, **16, 17** : Baie Orange, **24** : Punta Arenas, **27** : Baie Orange, **29** : Anse Saint-Martin, **31** : 68°31'W<sup>1</sup>, 53°13'S, **34** : Punta Arenas, **39** : Sud-Est de la Terre-de-Feu, **52** : Mouillage de Maxwell, **58** : Canal Franklin, **59** : Nord de Wollaston dans la Baie Gretton, **66, 81** : Baie Orange, **86** : Canal du Beagle, **93** : Dans le canal du Beagle (71°45'W<sup>1</sup>), **102, 103** : Punta Arenas, **107** : Ile de l'Ouest (Malouines), **108** : Baie Française dans les Iles Malouines, **112** : Canal du Beagle, **116** : Baie Orange, **119** : Baie Naturaliste (Maxwell), **121, 122, 123** : Baie Carfort au sud de l'île de Lachappoucyekha, **125, 128, 129** : New Year Sound, **143** : Baie d'Aayakich, **149** : Baie Orange, **153** : Ile Burnet, **154** : Baie Saint-Nicolas dans le détroit de Magellan, **157** : Punta Arenas (détroit de Magellan), **158** : Baie Saint-Nicolas dans le détroit de Magellan, **160** : Baie Elisa, **161** : Canal du Beagle, **162** : Baie Orange, **165** : A un mille dans le NW de Veresland, **166** : Nord de Wollaston dans la Baie Gretton, **167** : NW de l'île Grévy au Cap Hall, **172** : Au Sud de

Cap Horn, **174** : A un mille dans le SW de l'île Scott, **181** : Baie du Beagle en face de Lapataya. Voir légende Figure 3.

<sup>1</sup> En 1883, les cartes marines françaises avaient comme méridien de référence celui de Paris. Celui-ci est situé 2°20' plus à l'est que le méridien de Greenwich qui est adopté comme standard international en octobre 1884.

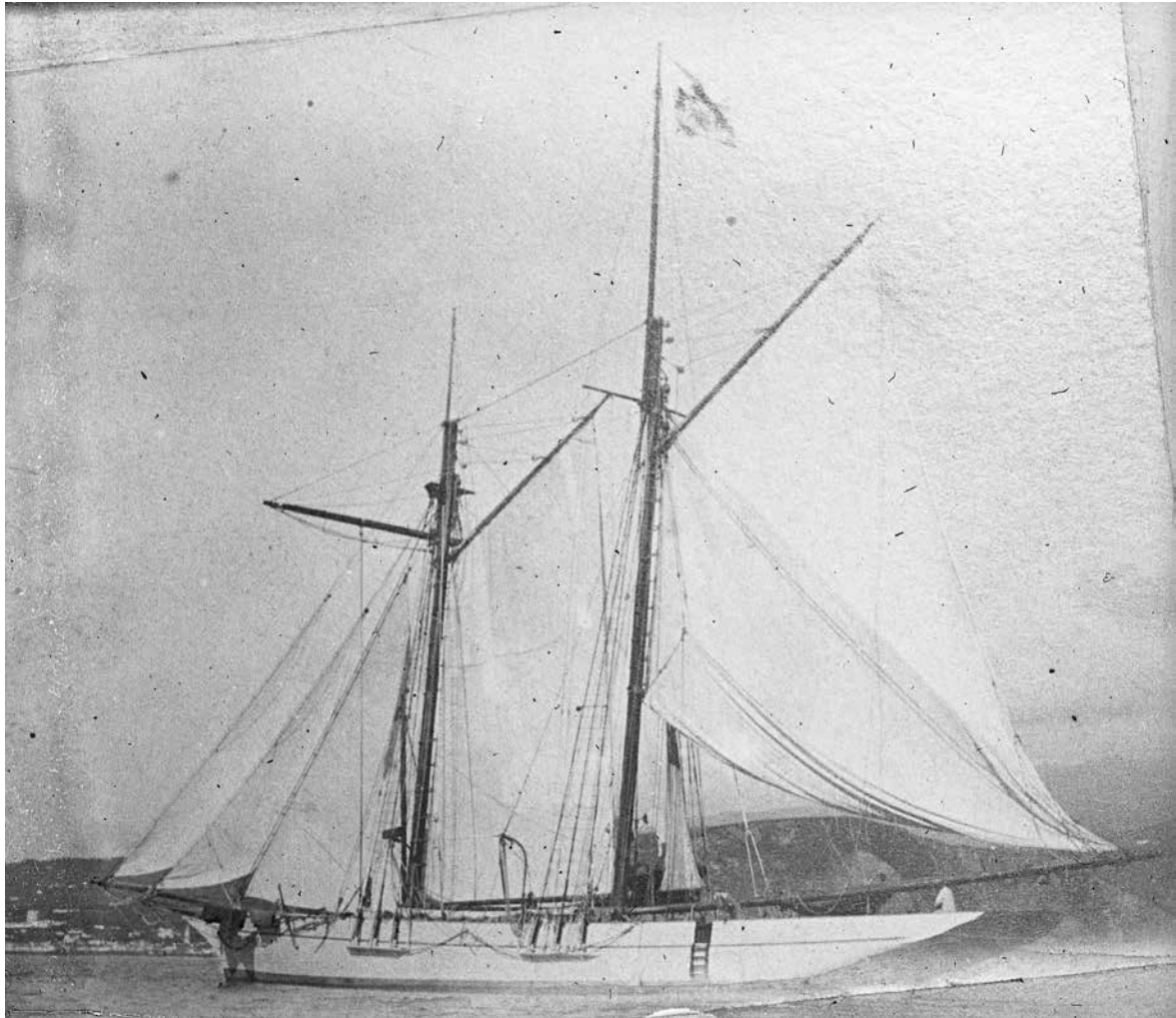


Figure 15 : Yacht (océanographique) *l'Hirondelle* d'après photographie Dabney de 1888 aux Açores, © Coll. du Musée océanographique de Monaco.



Figure 16 : Localisation des dragages effectués par l'*Hirondelle* en 1886 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **53** (43°44'50''N, 8°12'W<sup>1</sup>), **56** (43°38' 30''N, 8°28'30''W<sup>1</sup>), **57** (43°44'30''N, 8°32'30''W<sup>1</sup>), **59** (43°53'N, 9°1'W<sup>1</sup>), **60** (43°57'N, 9°27'W<sup>1</sup>) et **61** (43°58'N, 10°2'W<sup>1</sup>) : Golfe de Gascogne, côte Nord de l'Espagne. <sup>1</sup> Les coordonnées géographiques inscrites dans la légende sont celles notées dans les deux publications de Fischer & Ehlert (1890a, 1892a).

<sup>1</sup> Sur les cartes marines françaises datant d'avant 1884, le méridien de référence est celui de Paris qui est 2°20' plus à l'est du méridien de Greenwich.



Figure 17 : Localisation des dragages effectués par l'*Hirondelle* en 1887 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages.

**161** (46°4'40''N, 49°2'30''W<sup>1</sup>) et **162** (46°50'6''N, 50°11'45''W<sup>1</sup>) : Parage du banc de Terre-Neuve.

<sup>1</sup> Sur les cartes marines françaises datant d'avant 1884, le méridien de référence est celui de Paris qui est 2°20' plus à l'est du méridien de Greenwich.

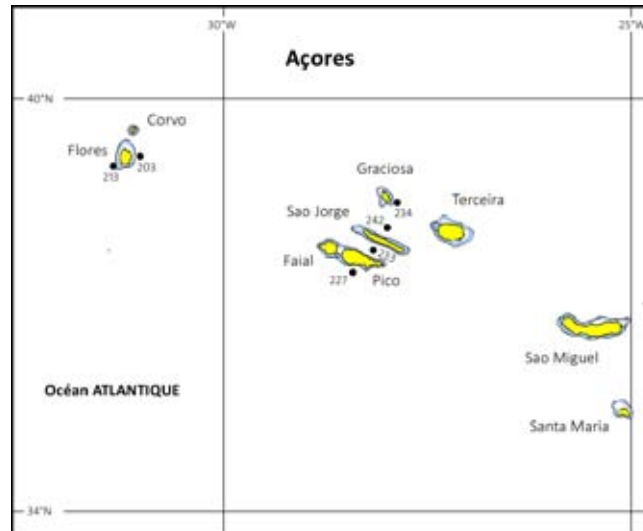


Figure 18 : Localisation des dragages effectués par l'*Hirondelle* en 1888 au cours desquels des brachiopodes actuels ont été récoltés. Les chiffres correspondent aux numéros des dragages. **203** (39°26'30''N, 33°23'W<sup>1</sup>) : Est de Florès, **213** (39°22'48''N, 33°45'30''W<sup>1</sup>) : Ouest de Florès, **227** (38°23'N, 30°46'52''W<sup>1</sup>) : Sud de Pico, **233** (38°33'21''N, 30°28'54''W<sup>1</sup>) : Entre Pico et Sao Jorge, **234** (39°1'40''N, 30°15'40''W<sup>1</sup>) : Est de Graciosa et **242** (38°48'30''N, 30°19'W<sup>1</sup>) : Entre Graciosa et Sao Jorge.

<sup>1</sup> Sur les cartes marines françaises datant d'avant 1884, le méridien de référence est celui de Paris qui est 2°20' plus à l'est du méridien de Greenwich.

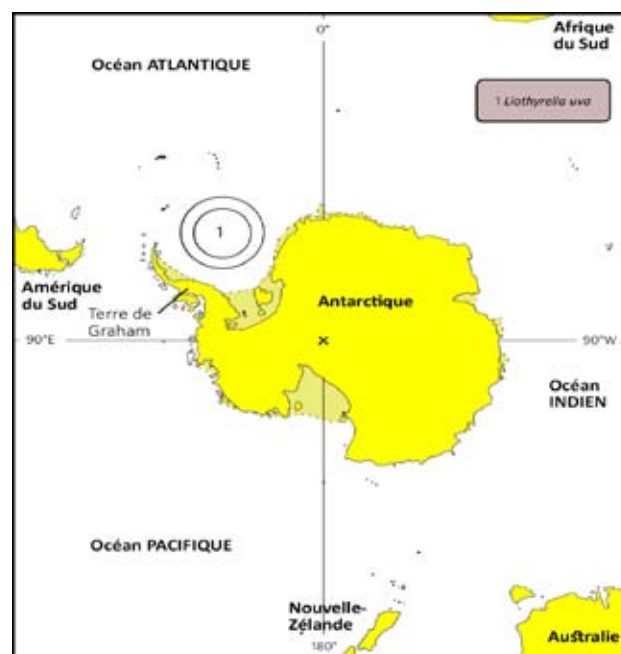


Figure 19 : Répartition géographique de *Liothyrella uva* récolté lors de l'expédition du *Français* entre 1903 et 1905. Voir légende Figure 3.



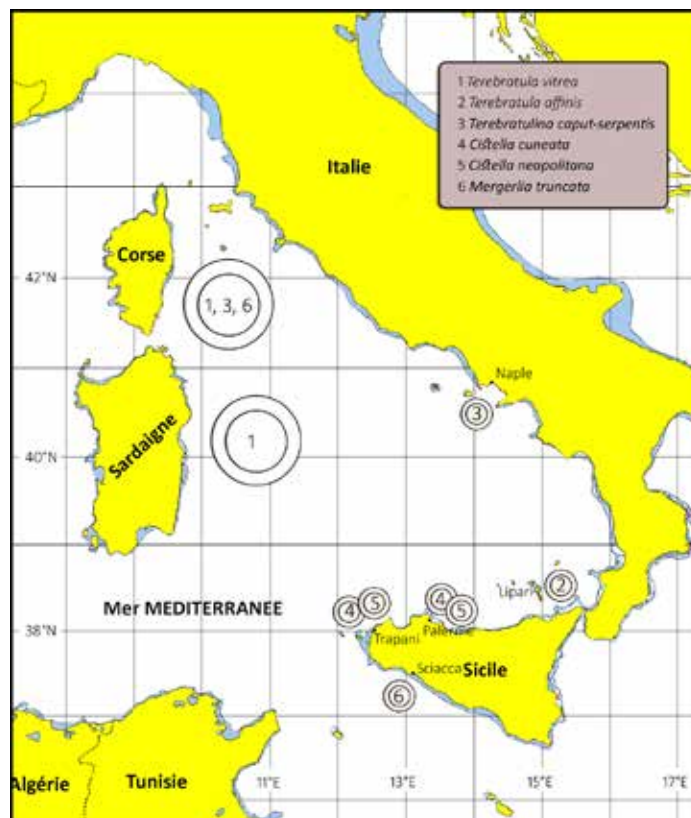


Figure 20 : Répartition géographique des brachiopodes actuels de la collection Monterosato. Voir légende Figure 3.

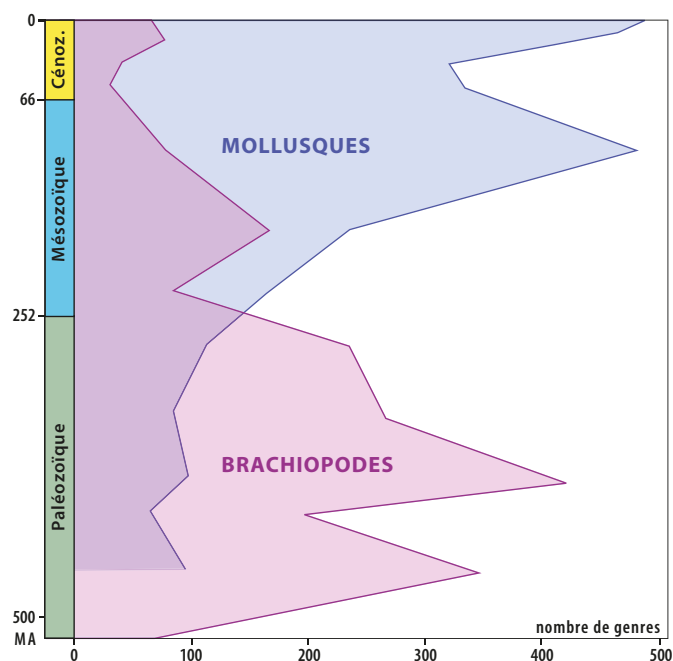


Figure 21 : Comparaison des courbes cumulatives du nombre total des genres de Brachiopodes et de Mollusques Bivalves au cours du Phanérozoïque (modifié, d'après Babin *et al.*, 1992).

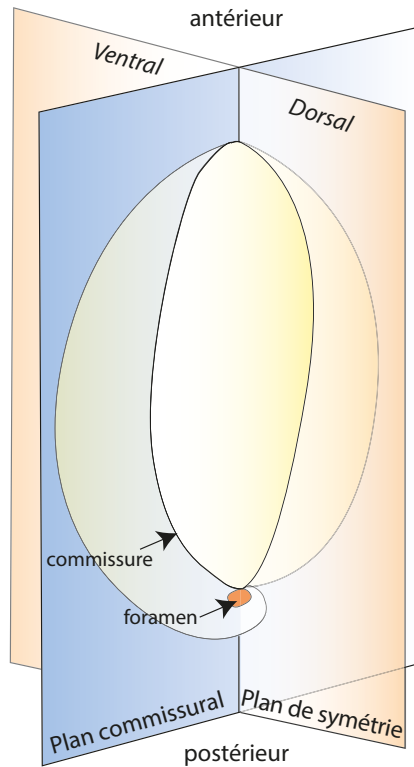


Figure 22 : Représentation schématique d'une coquille de *Gryphus* en position de vie. Commissure est la ligne de jonction des deux valves, par laquelle passe le plan commissural qui est perpendiculaire au plan de symétrie.

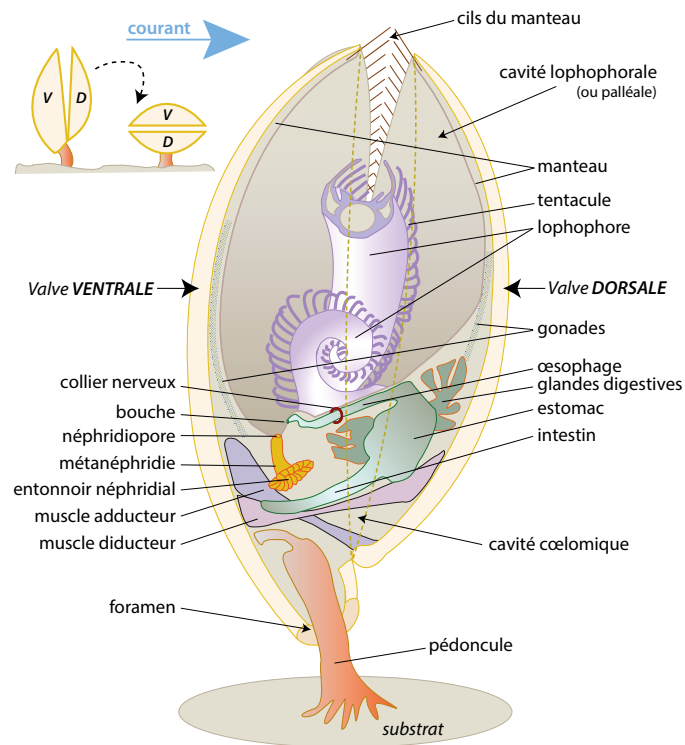


Figure 23 : Schéma avec les principaux organes internes d'un brachiopode *Gryphus* en position de vie en fonction du courant.

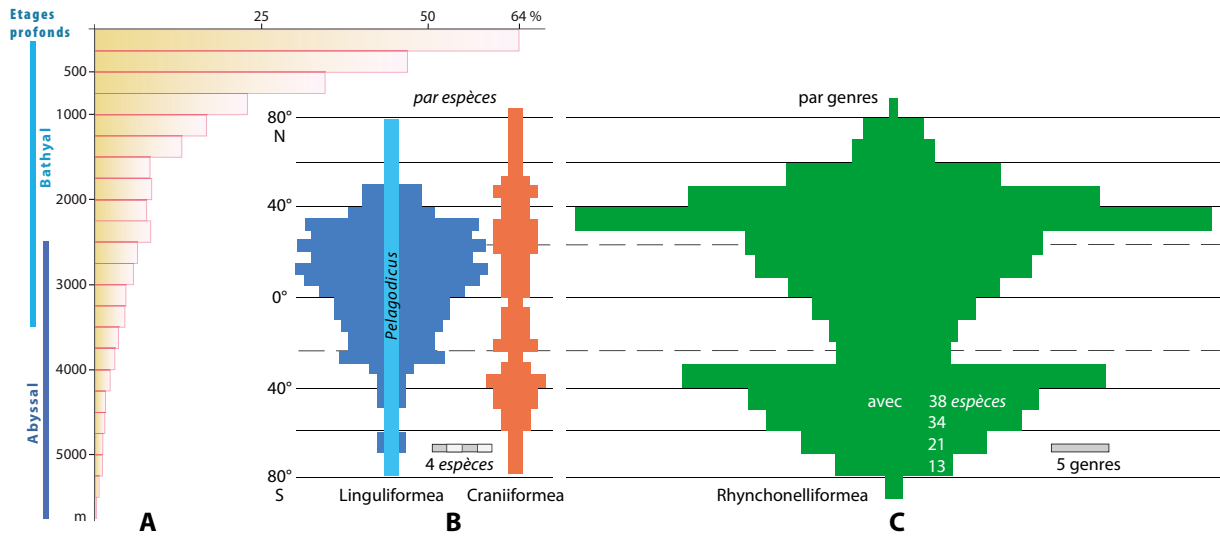


Figure 24 : Distribution bathymétrique des espèces actuelles de brachiopodes (en pourcentage, d'après Emig, 1988a). (A) Distribution latitudinale des espèces actuelles de Linguliformea et Craniiformea (B) et des genres de Rhynchonelliformea (C).

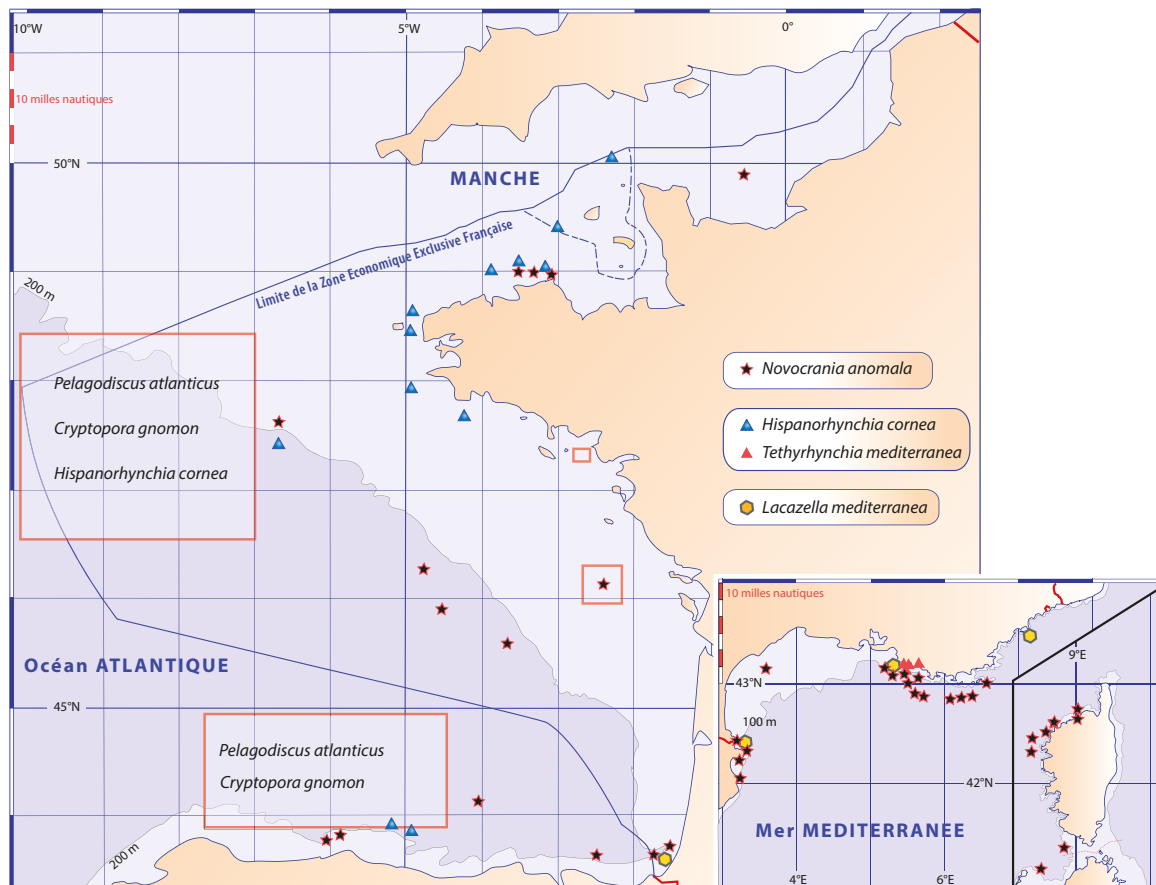


Figure 25 : Répartition géographique des Linguliformea, Craniiformea et Rhynchonelliformea (Rhynchonellida et Thecideida) - voir texte. Les rectangles en rouge correspondent à des zones fortement prospectées dans lesquelles les espèces citées ont été récoltées dans de nombreuses stations.

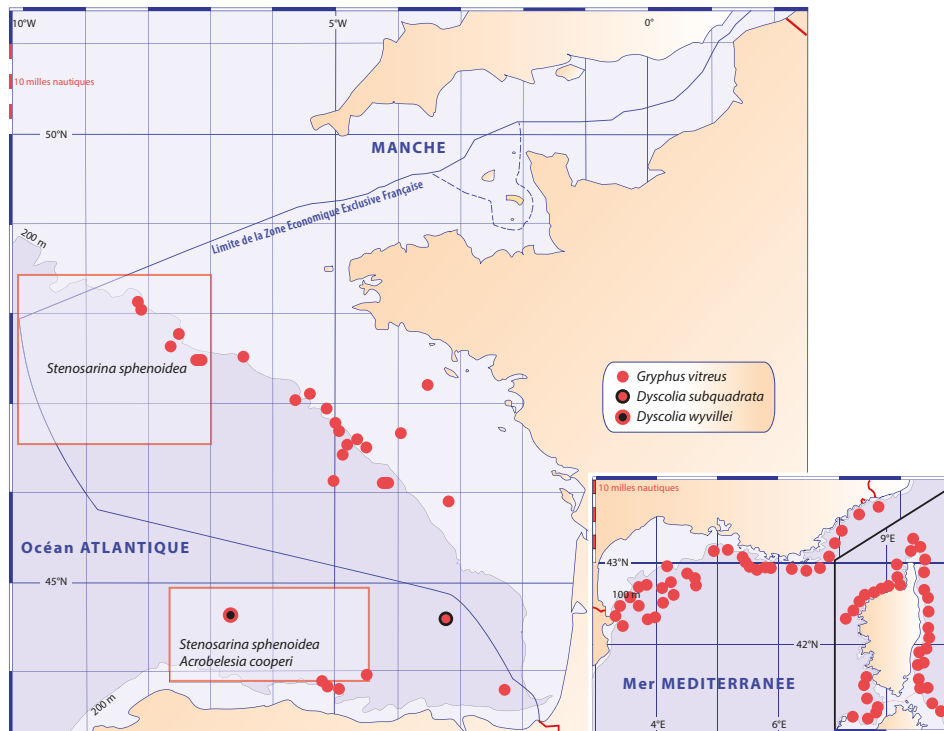


Figure 26 : Répartition géographique des Rhynchonelliformea : Terebratuloidea et Dyscolioidea - voir texte. Les rectangles en rouge correspondent à des zones fortement prospectées dans lesquelles les espèces citées ont été récoltées dans de nombreuses stations.

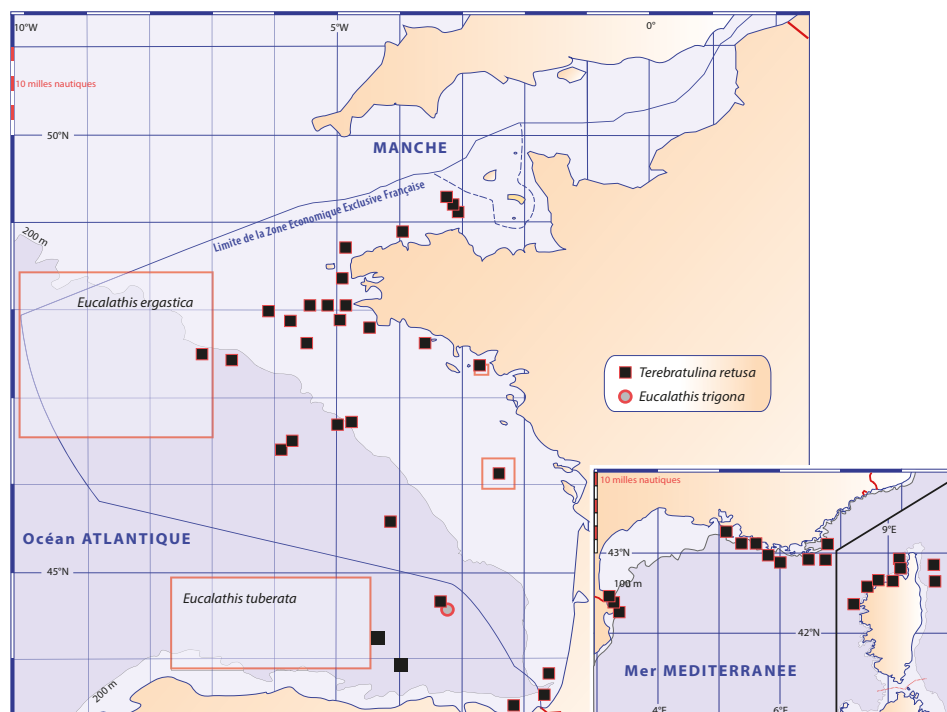


Figure 27 : Répartition géographique des Rhynchonelliformea : Cancellothyridoidea - voir texte. Les rectangles en rouge correspondent à des zones fortement prospectées dans lesquelles les espèces citées ont été récoltées dans de nombreuses stations.

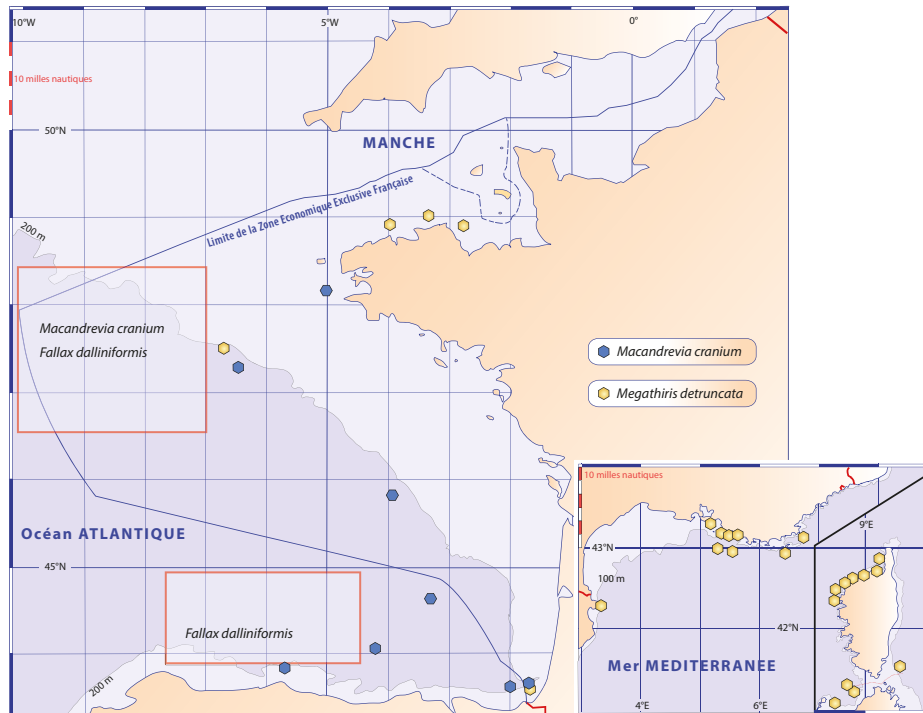


Figure 28 : Répartition géographique des Rhynchonelliformea : Zeilleroidea, Kingenoidea et Megathyridoidea - voir texte. Les rectangles en rouge correspondent à des zones fortement prospectées dans lesquelles les espèces citées ont été récoltées dans de nombreuses stations.

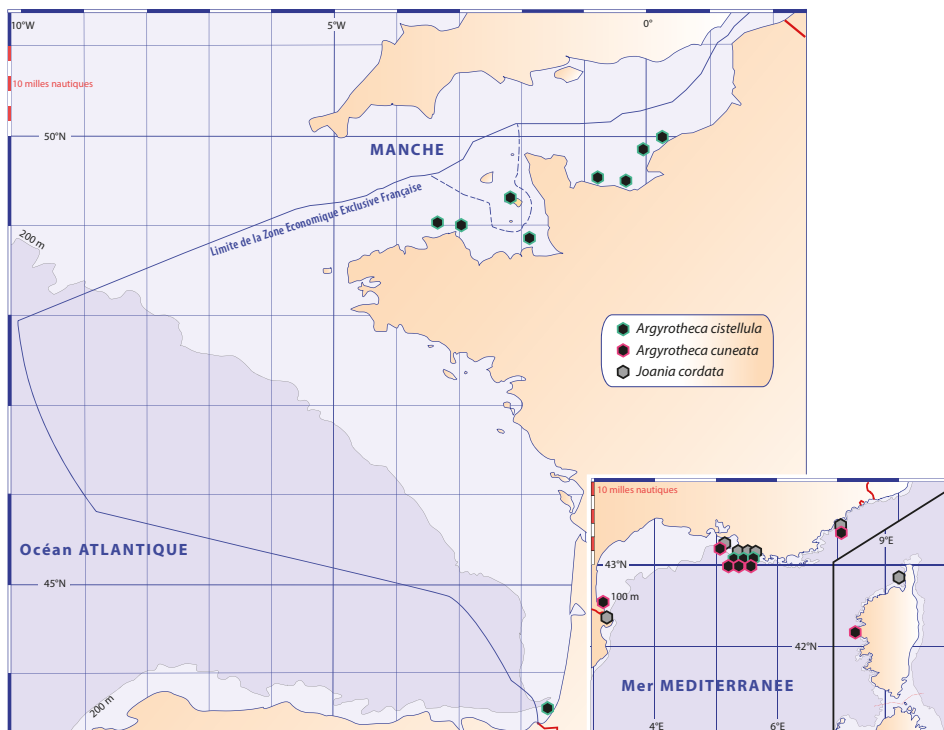


Figure 29 : Répartition géographique des Rhynchonelliformea : Megathyridoidea (suite) - voir texte.

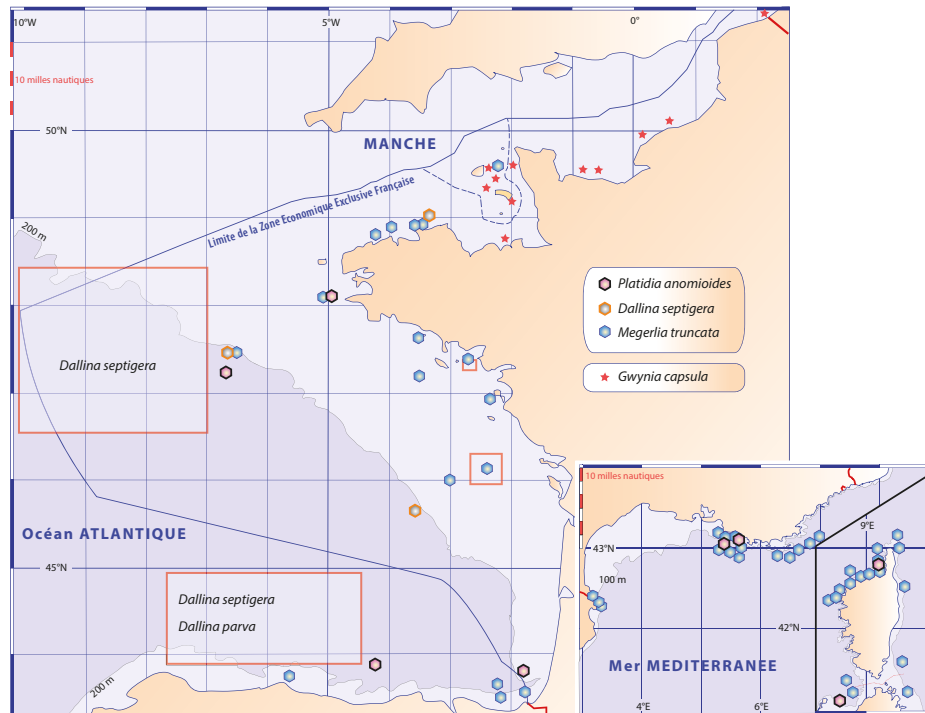


Figure 30 : Répartition géographique des Rhynchonelliformea : Platidioidea, Terebratelloidea, Kraussinoidea et Gwynioidea - voir texte. Les rectangles en rouge correspondent à des zones fortement prospectées dans lesquelles les espèces citées ont été récoltées dans de nombreuses stations.

PLANCHES /  
PLATES

## Planche 1.

**A-C**, *Lingula anatina* LAMARCK, 1801, ML-ZOO-MAL-00051; interior of dorsal (A) and ventral (B) valves, x1.5; C, photograph of the old label, x1.

**D-H**, *Discradisca cumingi* (BRODERIP, 1833), ML-MAL-01291; three specimens fixed to a card (D, x0.8); E, photograph of the text written by hand in the accompanying card (x0.8); ventral (F, x2) and oblique posterior (G, x1.6) views of both valves (anteriorly there is a smaller specimen in dorsal view); H, dorsal valve exterior of the third specimen (x2.5).

**I-L**, *Novocrania anomala* (MÜLLER, 1776), ML-ZOO-MAL-00104; two dorsal valves fixed to a card (I, x1); photograph of the card-board from which a tube was detached (J, x0.5); interior of the two dorsal valves (K and L, x3.6).

**M**, *Cryptopora gnomon* JEFFREYS, 1869; photograph of the card-board from which a tube has been detached (M, x0.5).

**N-W**, *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887), ML-ZOO-MAL-00053; a dorsal valve and a ventral fixed to a card (N, x1.2); O, photograph of the text written by hand in the reverse of the card (x1.5); P-S, details of the ventral umbo showing pedicle aperture, pedicle collar (P, x2.7; Q, x5.4; S, x6.5), deltidial plates (S, x6.5), hinge teeth (S, x6.5) and dental plates (R, x4); T-V, detail of cardinalio in ventral (T, x4.5, U, x13.5) and anteroventral (V, x8) views; photograph of the card-board from which a tube has been detached (W, x0.5).





## Planche 2.

**A-F**, *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887), ML-ZOO-MAL-00046; a dorsal valve and a ventral fixed to a card (A, x1.5); B, photograph of the text written by hand in the reverse of the card (x1.5); C, photograph of the old label, x1; D-E, posterior area of the ventral valve viewed dorsally (D, x4) and slightly anterodorsally (E, x4.5); F, posterior area of the dorsal valve viewed ventrally (3.2).

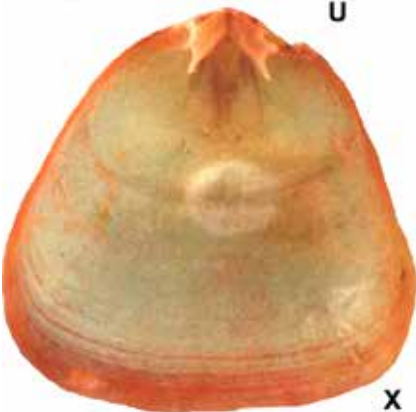
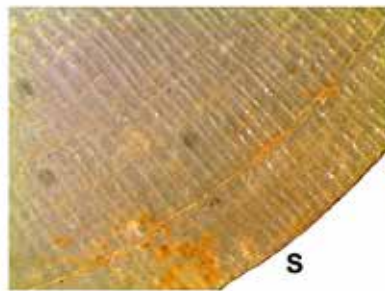
**G-T**, *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887), ML-ZOO-MAL-00133; two articulated specimens fixed to a card (G, x0.8); specimen of bigger size in anterior (H), dorsal (I), ventral (J), and lateral (K) views (all x1); small specimen in dorsal (L), ventral (M), anterior (N), posterior (O) and lateral (P) views (all x1), Q, anterior view of slightly open shell showing cardinalia and dental plates (x2.5), R, detail of posterior region of shell, viewed dorsally showing pedicle aperture, deltidial plates and pedicle collar (x4), S-T, detail of the external ornamentation developed in the anterior commissure of the ventral valve (S, x8.5), and dorsal valve (T, x10).

**U-Z**, *Hispanirhynchia cornea* (FISCHER in DAVIDSON, 1887), ML-ZOO-MAL-00091; a dorsal valve, the posterior region of a ventral and the posterior most region of a broken dorsal valve fixed to a card (U, x0.9); V, enlargement of the cardinalia of the broken dorsal valve (V, x4), detail of the broken ventral valve (W, x3.8), and the complete dorsal valve in ventral (X, x3.2), dorsal (Y, x3.2) and anteroventral (Z, x3) views.



*Rhynchonella (Hemithyrus) cornea*. Fischer  
882. Sabara.

*Rhynchonella (Hemithyrus) cornea*. Fischer  
Locality: Louisa. Prof. 1435



### Planche 3.

**A-G**, *Hemithiris woodwardi* (ADAMS, 1863), ML-MAL-01299; a dorsal valve and a ventral fixed to a card (A, x1.2); B, photograph of the text written by hand in a second card introduced in the glass tube (x0.7); C-D interior of ventral valve (C, x3) and detail of posterior region (D, x8.3); E-G, exterior (E, x2.7) and interior (F, x3) of the dorsal valve and detail of cardinalia (G, x9).

**H-P**, *Notosaria nigricans* (SOWERBY, 1846), ML-ZOO-MAL-00047; articulated specimen in dorsal (H; detail in I, x6), posterior (L), lateral [with the shell closed (J) and open (K)], and anterior [with shell closed (M) and open (N)] views (all x1); P, photograph of the old label (x1.2); detail of the external ornamentation in the anterolateral commissure (O, x17.7).

**Q-Y**, *Notosaria nigricans* (SOWERBY, 1846), ML-ZOO-MAL-00088; a dorsal valve and a ventral fixed to a card (Q, x1.3); R-V, exterior (R, x1.5) and interior (S, x1.5) of the dorsal valve and detail of the cardinalia (T, x3.5; U, x5; V, x9); W-Y, exterior (W, x1.5) and interior (X, x1.5) of the ventral valve and detail of the posterior region showing pedicle aperture, pedicle collar, deltidial plates, and muscle scars (Y, x4.8).



#### **Planche 4.**

**A-E**, *Notosaria nigricans* (SOWERBY, 1846), ML-MAL-01285; a ventral valve and a dorsal fixed to a card (A, x1.5); B, detail of the cardinalia (x3.3); C, detail of the posterior region of the ventral interior (x3); D, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.7); E, photograph of a card-board without any label with registered number fixed in the reverse of it, and from which two glass-tubes have been detached (x0.8).

**F-H**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00032; two articulated specimens fixed to a card (F), x2.5; G, photograph of the old label, x1; H, the specimen fixed in the right side of the card partially open showing the interior of the dorsal valve and the posterior most of the ventral (x6).

**I-BB**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00029 (see also Planche 5, A-J, N); 14 articulated specimens in dorsal view (K, x5; N, x4.8; O, x6.3; P, x4.2; R, x6.5; S, x5.8; T, x4.9; U, x6.7; V, x5; X, x5.5; Y, x5; Z, x6.3; AA, x8.1; BB, x8.1); I-J, dorsal and anterior views of the same specimen illustrated in K (all x5); L, M and Q, anteroventral views of three open, articulated specimens showing their complex brachidia, with brachial lobes interdigitating with ramuli, and tuberculate interior of dorsal valve (L, x5.5; M, x6.2; Q, x15.7); W, very young shell of unknown brachiopod fixed on the dorsal valve illustrated in V (x16.7).



## Planche 5.

**A-J, N**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00029 (see also Planche 4, I-BB); A-C, two articulated specimens cemented one to another in lateral (A, x6.8), posterodorsal (B, x5.7) and dorsal (C, x7.4) views; D, interior of dorsal valve (x11.8); E-G, interior of two ventral valves showing hinge teeth and hemispondylium supported by a short median septum (E, x4.7; F, x4.7; G, detail, slightly tilted of F, x14); I-J, ventral valve interior in dorsal (H, x5.3) and anterodorsal (I and J, x5.8) views showing hinge teeth and hemispondylium supported by a short median septum (J, x5.8).

**K**, dorsal view of an articulated and small *Megerlia* (x8.3).

**L**, articulated bivalve (*Arca?*) (x5.2).

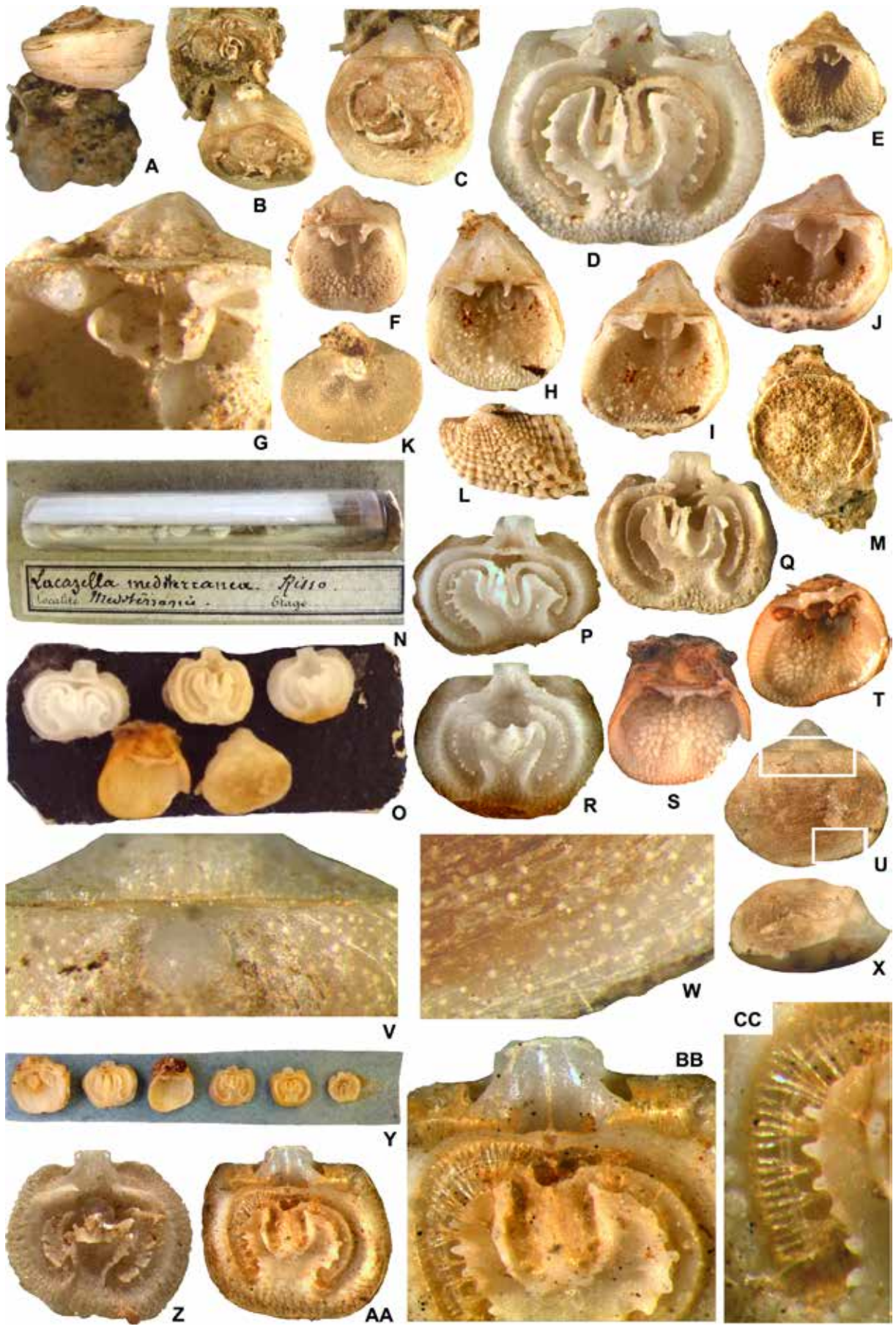
**M**, bryozoan colony (x6.6).

**N**, photograph of the card-board to which the glass tube is still glued (x1).

**O-X**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00060; O, an articulated specimen, a ventral valve and three dorsal fixed to a card of black colour (x4); P-R, interior of the three dorsal valves showing cardinalia and complex brachidium (P, x7; Q, x8; R, x8.6); S-T, interior of ventral valve in dorsal and anterodorsal views (x6); U-X, articulated specimen in dorsal (U, x6.8) and laterodorsal (X, x6.8) views; V, detail of U (marked by the upper rectangle) showing endopunctae, part of the straight hinge line and the protegular shell just below mid hinge line (x30); W, detail of U (marked by the lower rectangle) showing endopunctae and external ornamentation (x44).

**Y-CC**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00102 (see also Planche 6, A-G); Y, four disarticulated dorsal valves and two ventral fixed to a card (x2.2); Z-AA, interior of the two dorsal valves fixed in the right side of the car, showing cardinalia and complex brachidium (Z, x12; AA, x10); BB and CC, detail of AA showing cardinalia and brachidium (BB, x24) and tentacles of the lophophore (CC, x36.5).

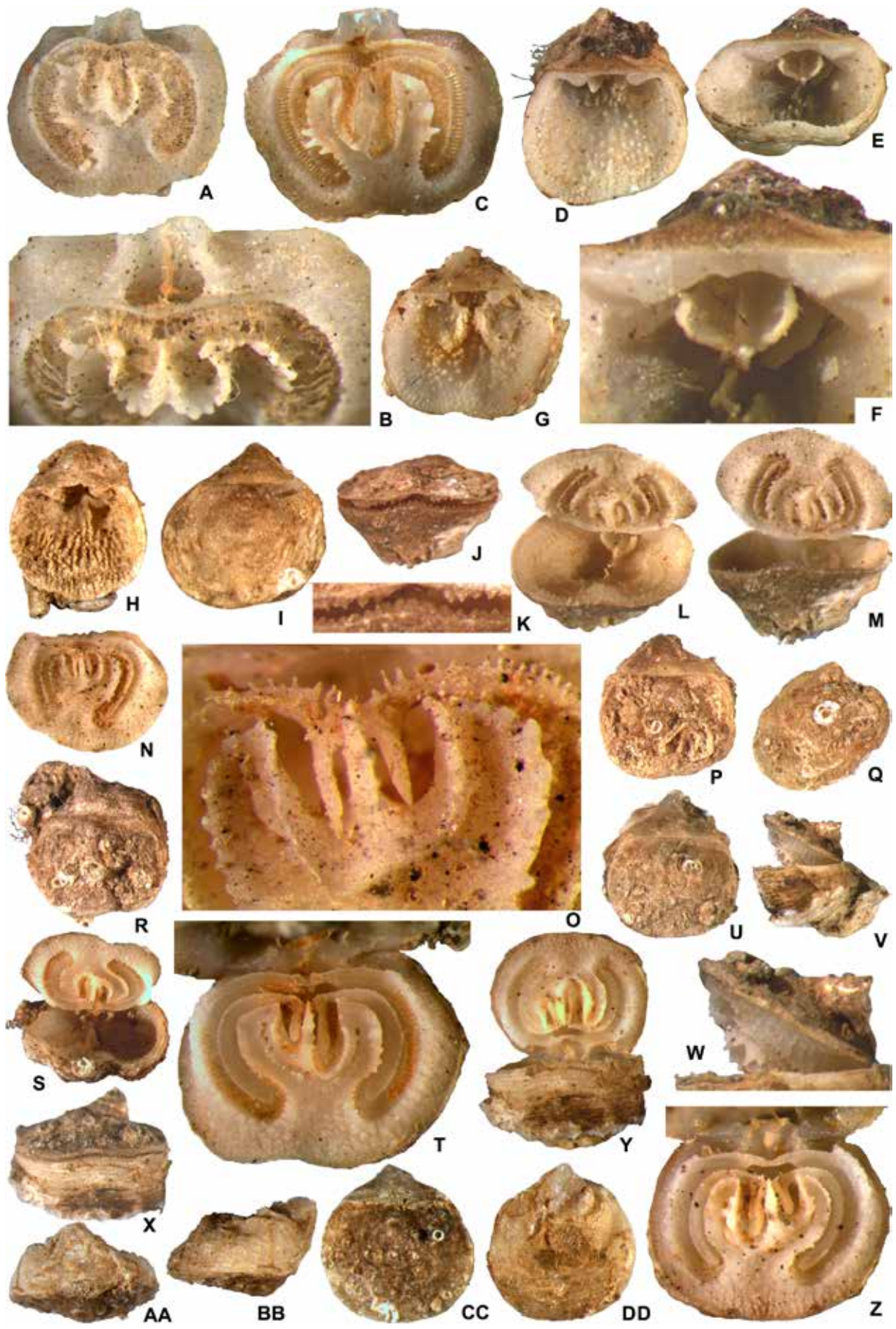




## Planche 6.

**A-G**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00102 (see also Planche 5, Y-CC); A, C, interior of the other two disarticulated dorsal valves fixed in the car, showing cardinalia, complex brachidium and remains of the lophophore (A, x9.8; C, x9.9); B, detail, slightly tilted, of A showing cardinalia, brachidium and tentacles of the lophophore (B, x19.6); D-E, interior of ventral valve fixed near the middle of the card, in dorsal (D, x8) and anterodorsal (E, x9.3) views; F, detail of E showing ventral interarea, pseudodeltidium and hemispondylium (x26.3); G, interior of the ventral valve fixed in the left of the card, in dorsal view (D, x6.6).

**H-DD**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00115 (see also Planche 7, A-P); H, interior of ventral valve showing ventral interarea, pseudodeltidium, hinge teeth, hemispondylium and tuberculate interior (x7); I-O, articulated specimen in dorsal (I, x7.2), anterior [with the shell closed (J, x7) or slightly open (L, x8; M, x8.2)] views, K, detail of J showing tubercles at the anterior commissure (x16.8), N, interior of dorsal valve of the previous specimen (x7.2), O, enlargement of posteromedian part of brachial skeleton showing median ramus and short minor interbrachial lobes (x35.2); P-Q, dorsal view of two articulated specimens (P, x5.3; Q, x6); R-T, articulated specimen in dorsal view (R, x4.2), in anterodorsal view, with the shell open (S, x4.2) and enlargement of the dorsal valve of this specimen showing cardinalia, complex brachidium and tuberculate interior (T, x8.7); U-Z, articulated specimen in dorsal (U, x6), lateral (V, x5.3; detail in W, x13.4) and anterior (X, x7) views, Y-Z, same specimen with the shell open (Y, x7.6) and enlargement of dorsal valve interior showing cardinalia, complex brachidium with complete bridge (cf. Pajaud, 1970) and tuberculate surface (Z, x11.7); AA-DD, articulated specimen in dorsal (CC, x7.3), ventral (DD, x7.2), posterior (AA, x7.2) and lateral (BB, x7.5) views.



## Planche 7.

**A-P**, *Lacazella mediterranea* (RISSO, 1826), ML -ZOO-MAL-00115 (see also Planche 6, H-DD); A-I, two articulated specimens cemented one to another in different views showing shell shape, interdigitation in the growth of both shells clearly appreciated at the anterior commissure and interior of both valves in the photographs with one of the shells open (A, B, x4.75; C, x5.5; D, x7; E, x8.6; F, x5.8; G, x6,25; H-I, x6.3); J-N, articulated specimen in anterolateral (J, x6), lateral (L, x9), dorsal (M, x5) and anteroventral views with the shell open showing complex brachidium (N, x8), K, detail of J showing tubercles in the interior of the ventral valve near the anterior commissure (K, x25); O-P, articulated specimen in dorsal (O) and anterior views (P, both x6,7).

**Q-FF**, *Lacazella mediterranea* (RISSO, 1826), ML-MAL-01288; Q, photograph of glass tube, with the specimens inside, and the card-board from which the glass tube seems to have been detached (x0.5); R, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.7); S, number written in the reverse of the paper (x1); T, two articulated specimens and a ventral valve and a dorsal fixed to a card (x1); U-Y, dorsal (U), ventral (V), anterior (W), posterior (X) and lateral (Y) views of the specimen fixed in the left side of the card (U-X, x5.2, Y, x5.8); Z, dorsal view of the 2nd articulated specimen (x5); AA-CC, dorsal (AA, x5) and anterodorsal (BB, x5) views of the ventral valve, CC enlargement of BB showing ventral interarea, pseudodeltidium, hinge teeth and hemispondylium supported by short median septum (x23.2); DD-FF, interior of the dorsal valve fixed in the right side of the card (T) viewed ventrally (DD), posteroventrally (EE) and anteroventrally (FF) showing cardinalia and complex brachidium with complete bridge (cf. Pajaud, 1970) (x12).

**GG-JJ**, photographs of four card-boards without any label with registered number fixed in the reverse of them, and from which the glass-tubes, may be those of the four lots illustrated above, have been detached (x0.6).



## Planche 8.

**A-F**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00025; photograph of an articulated specimen, a ventral valve and a dorsal fixed to a card (A, x0.6); B, photograph of the text written in the reverse of the card (x1.2); C-E, dorsal view of the articulated specimen fixed in the left side of the card (C, x1.5), ventral view of the dorsal valve (D, x1.8), dorsal view of the ventral valve (E, x1.4), F, enlargement, slightly tilted, of the umbonal area of the ventral valve illustrated in E (x3).

**G-P**, *Gryphus vitreus* (BORN, 1778), ML -ZOO-MAL-00026; photograph of an articulated specimen and the light blue card from which the specimen seems to have been detached (G, x0.7); H, photograph of the text written in the reverse of the card (x1.3); I-O, dorsal (I), dorsal slightly tilted (J), ventral (L), lateral (M), anterior (closed, N; slightly open, O) and posterior (P) views of the articulated specimen (all x1); K, enlargement of the umbonal area illustrated in J showing an epithyrid, labiate pedicle foramen (x3.3).

**Q-X**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00077; disarticulated and eroded dorsal valve viewed externally (Q) and internally (R) (both x2); S, detail of R (x6.5); disarticulated and eroded ventral valve viewed externally (T), internally (U) (both x2) and posterodorsally (W, x3); X, photograph of the piece of paper accompanying the valves in the interior of the tube (x1).

**Y-BB**, *Gryphus vitreus* (BORN, 1778), ML -ZOO-MAL-00112; photograph of a ventral valve and a dorsal on the light green card from which the valves seem to have been detached (Y, x0.8); dorsal view of the ventral valve (Z, x1.1); AA, enlargement of the umbonal area of the ventral valve illustrated in Z (x4); BB, enlargement of the cardinalia of the dorsal valve illustrated in Y (x4).

**CC**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00123; photograph of two articulated specimens fixed to a card (A, x1.5).

**DD-FF**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00128; exterior (DD) and interior (EE) of a ventral valve (x1.6); FF, enlargement of the umbonal area of the ventral valve illustrated in EE (x4).

**GG-MM**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00137; GG, photograph of an articulated specimen and the light blue card from which the specimen seems to have been detached (x1.5); HH-MM, dorsal (HH, x1), ventral (II), lateral (JJ), posterior (KK), anterior (closed, LL; slightly open, MM, x1) views of the articulated specimen (x0.7).



## Planche 9.

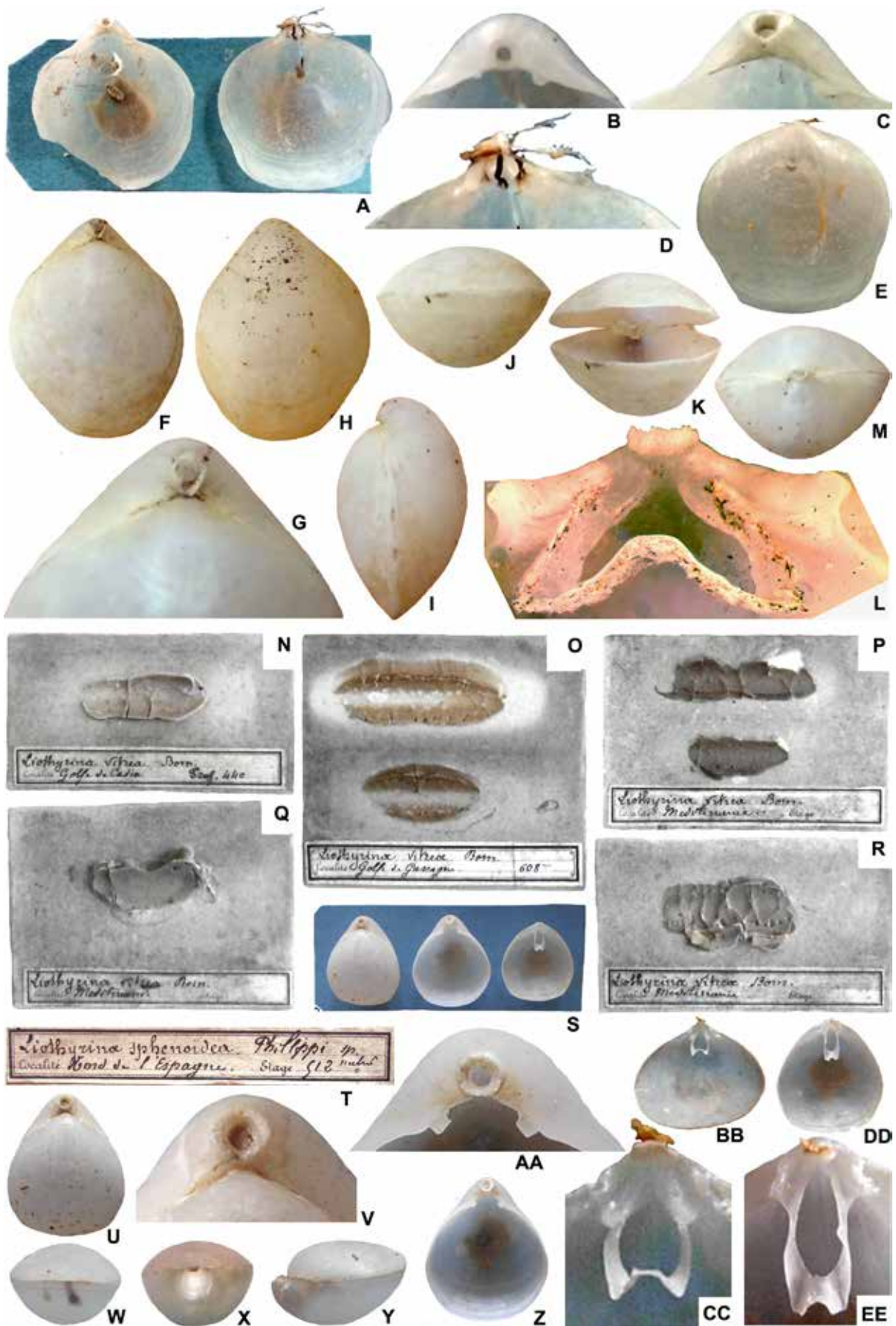
**A-E**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-00105; photograph of a disarticulated ventral valve and a dorsal fixed to a card (A, x1.8); B-C, enlargement of the umbonal area of the ventral valve viewed dorsally (C, x5) and slightly tilted posterodorsally (B, x2.8); D, detail of cardinalia of the dorsal valve illustrated in A (x4); E, exterior of the dorsal valve (x2).

**F-M**, *Gryphus vitreus* (BORN, 1778), ML-MAL-01294; F, H-K, M, dorsal (F), ventral (H), lateral (I), anterior (closed, J; slightly open, K) and posterior (M) views of the articulated specimen (x1); G, enlargement of the umbonal area illustrated in F showing an epithyrid, labiate pedicle foramen (x2); L, detail of the cardinalia and loop illustrated in K (x13);

**N-R**, photographs of four card-boards without any label with registered number fixed in the reverse of them, and from which the glass-tubes, may be those of the lots illustrated above, have been detached (x0.6).

**S-EE**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00013 (see also Planche 10A); S, photograph of an articulated specimen, a ventral valve and a dorsal fixed to a card (x0.7); T, photograph of the old label, x0.8; U-Y, dorsal (U), anterior (W), posterior (X) and lateral (Y) views of the articulated specimen of S (x1), V, detail of U (x4); Z, interior of the disarticulated ventral valve (x1) and AA, detail of the umbonal area of the ventral valve, slightly tilted (x3); interior of the disarticulated dorsal valve in ventral (DD, x1) and anteroventral (BB, x1.5) views; CC, detail of the cardinalia showed in BB (x5); EE, detail of the cardinalia showed in DD (x4.5).





## Planche 10.

**A**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00013 (see also Planche 9S-EE); photograph of the text written by hand in the reverse of the card-board (x1.3).

**B-L**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00015; B, photograph of an articulated specimen, a ventral valve and a dorsal fixed to a card (x1); C, F-G, dorsal (C), lateral (F) and anterior views (x1.5) of the articulated specimen in B; D-E, detail of the umbonal area of the articulated specimen (D, x2; E, x4); H, detail of G showing the fine concentric ornamentation in the exterior of the dorsal valve, near the anterior commissure (x5); I, interior of the ventral valve (x1.5), and detail (J, x6.5); K, photograph of the old label (x1); L, photograph of the text written by hand in the reverse of the card-board (x1.2).

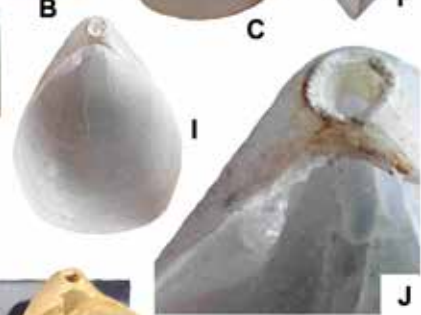
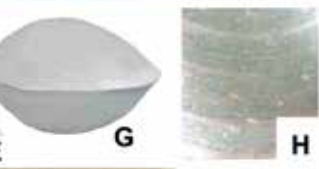
**M-S**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00086; M, photograph of an articulated specimen, a ventral valve and a dorsal fixed to a glass-slide with a card of bright black colour below (x0.8); N-O, exterior (N, x1.2) and interior (O, x1.5) of the disarticulated dorsal valve; P-R, detail of the cardinalia and loop viewed ventrally (P, x5.2), slightly tilted posteriorly (Q, x4.5) and anteriorly (R, x3.2); S, posterodorsal view of the ventral valve fixed in the middle of the card (M) showing epithyrid pedicle foramen and teeth (x1).

**T-X**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00087; T, photograph of a ventral valve and a dorsal fixed to a card (x1.5); U-V, detail of the cardinalia and loop viewed ventrally (V, x4) and tilted slightly anteroventrally (U, x7.5); W, anteroventral view of the dorsal valve (x1.2); X, detail of the ventral umbonal area of T showing foramen, symphytium, teeth and dried pedicle (x3.5).

**Y**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00094; photograph of two dorsal valves and two ventral, slightly broken, fixed to a card (x1.5).

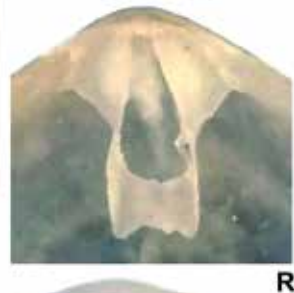
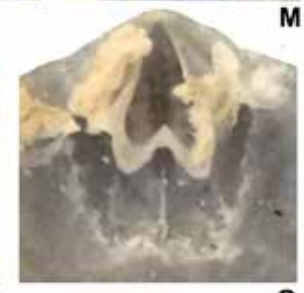
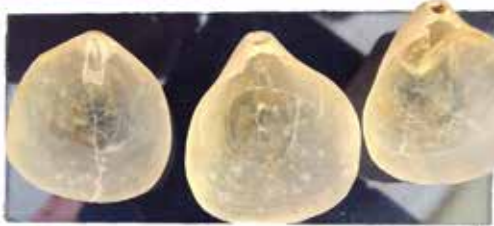
**Z**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00124; photograph of a ventral valve and a dorsal fixed to a card (x1.5).

Invasillon 1882  
 6 Juillet.  
 No. 3.  
*L. sphenoides.*



*Liobyrina sphenoides*. Philippi.  
 Localité Nord de l'Espagne. Prof. 513 m.

Invasillon 1882  
 6 Juillet.  
 No. III.  
*L. sphenoides.*



## Planche 11.

**A-H**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00134; A, photograph of a ventral valve and a dorsal fixed to a card (x1); B, interior of the ventral valve (x1.3), C, detail of B (x2); D, detail of umbonal area of the ventral valve, slightly rotated, showing pedicle foramen and teeth (x2.4); E, interior of dorsal valve (x1.3); F, detail of E (x2.6) showing cardinalia and loop; G, interior of dorsal valve slightly tilted anteroventrally (x1.5); H, detail of G (x2.6) showing cardinalia and median fold, ventrally directed, in the transverse band of the loop.

**I-K**, *Stenosarina davidsoni* LOGAN, 1998, ML-ZOO-MAL-00140; I, photograph of a ventral valve and a dorsal fixed to a card (x1.5); J, interior of dorsal valve (x2.8); K, detail of J (x7) showing cardinalia and median fold, ventrally directed, in the transverse band of the loop.

**L-N**, *Stenosarina davidsoni* LOGAN, 1998, ML-MAL-01279; L, photograph of a ventral valve and the card from which the valve seems to have been detached (x1); M, enlargement of the umbonal area of ventral valve showing pedicle foramen and teeth (x3.8); N, photograph of the text written by hand in piece of paper introduced also in the glass tube (x1).

**O-P**, *Stenosarina davidsoni* LOGAN, 1998, ML-MAL-01280; O, photograph of a ventral valve and a highly fragmented dorsal valve and the card from which the valves seem to have been detached (x1.3); P, photograph of the text written by hand in piece of paper introduced also in the glass tube (x1.3).

**Q-X**, *Stenosarina davidsoni* LOGAN, 1998, ML-MAL-01290; Q, photograph of a ventral valve and the card from which the valve seems to have been detached (x1); R, photograph of the text written by hand in a small white card introduced in the glass tube together with detached ventral valve and the pale brown card from which the valve seems to have been detached (x1.5); S, interior of the ventral valve (x2); T, detail of S showing short ventral beak, foramen, symphytium and teeth (x5); U, anterior view slight tilted dorsally of the ventral valve showing anterior commissure, foramen, symphytium and teeth (x1); V, detail of U showing foramen, symphytium, pedicle collar and teeth; W, ventral valve interior slight tilted, showing anterior commissure, foramen, symphytium and teeth (x1); X, detail of W showing foramen, symphytium, pedicle collar and teeth (x5).



Coalisman  
*L. spheroides*, 9/4 Guillet  
 Drag. 71, Prof. 640  
 Loc. Sahara, Soudan

*Leukocyprina spheroides* Grav. 82 Guillet  
 25 Prof. 25 Guillet  
 M. XX XI  
 Prof. 440

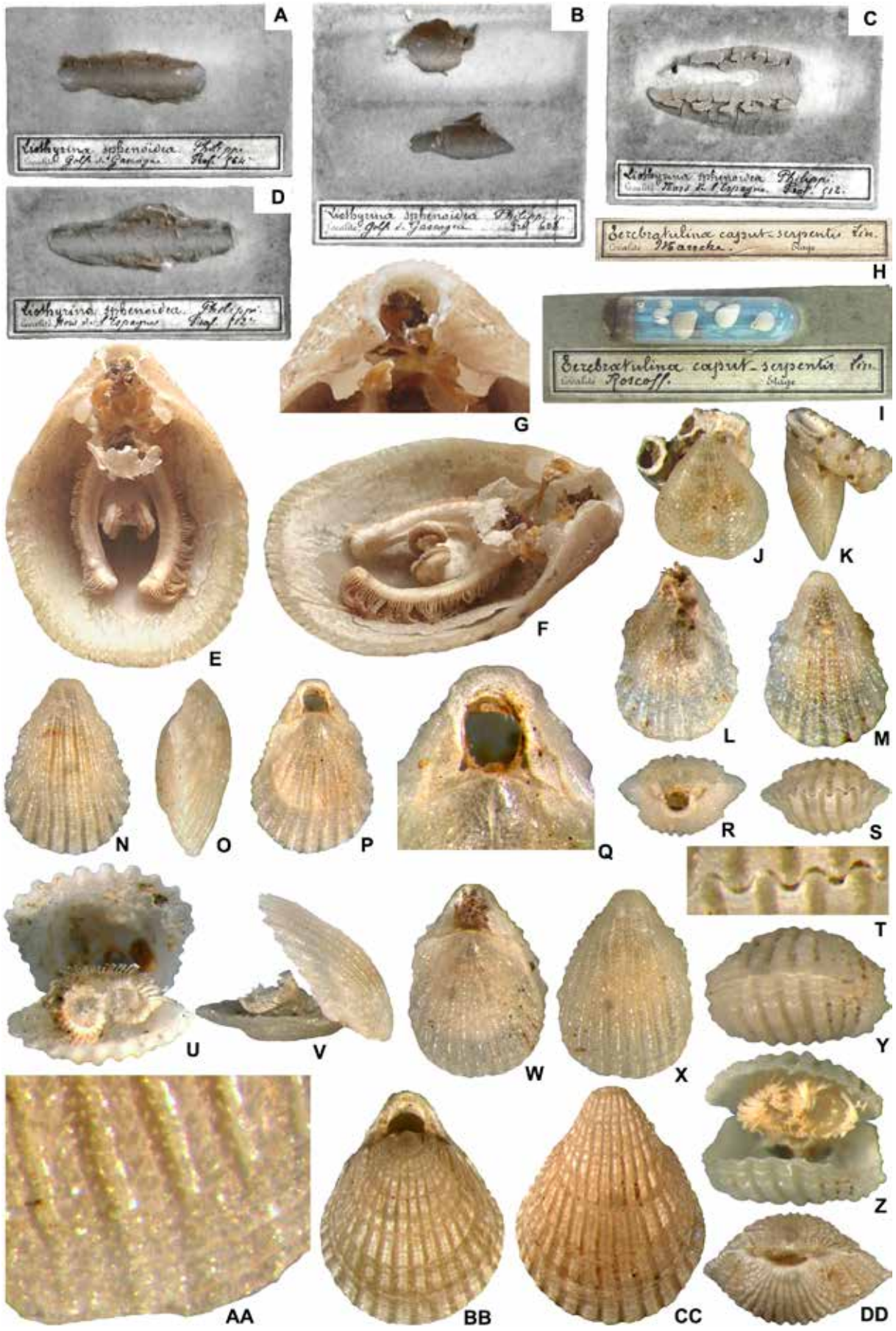
*Leukocyprina spheroides*  
 Guillet  
 Prof. 25

## Planche 12.

**A-D**, Photographs of four card-boards with an old label with the name '*Liothyryna sphenoidea* PHILIPPI sp.' but without any label with registered number fixed in the reverse of them, and from which the glass-tubes, may be those of the lots illustrated above, have been detached (x0.6) [*Liothyryna sphenoidea* PHILIPPI sp.' is described here as *Stenosarina davidsoni* LOGAN, 1998].

**E-H**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00016; interior of a ventral valve in dorsal (E, x4.5; G, detail x7) and laterodorsal (F, x5.4) views; H, photograph of the old label, x0.7.

**I-DD**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00012 (see also Planche 13A-II); I, photograph of glass tube, with ten articulated specimens loose inside, and the card-board from which the glass tube seems to have been detached (x0.8); J-K, ventral (J) and lateral (K) views (x12.6) of the first specimen (this specimen resembles a young *Joania cordata*, see comments when discussing that taxon); L-M, dorsal (L) and ventral (M) views (x17) of the second specimen; N-S, U-V, ventral (N), lateral (closed, O, x10; open, V, x11), dorsal (P), posterior (R) and anterior (closed, S, x10; open, U, x14.5) and lateral (V, x10) views of the third specimen; T, detail of S (x30); Q, detail of P (x25); W-Z, dorsal (W, x12), ventral (X, x12) and anterior (closed, Y, x16; open, Z, x16) views of the fourth specimen; AA, detail of X (x50); BB-DD, dorsal (BB), ventral (CC) and posterior (DD) views of the fifth specimen (x8). (See also Planche 13, A-II).



### Planche 13.

**A-II, *Terebratulina retusa*** (LINNAEUS, 1758), ML-ZOO-MAL-00012 (See also Planche 12, L-DD); A-D, lateral (A), and anterior [with the shell closed (B) and open with dorsal (C) or ventral (D) valve on top] views of the fifth specimen (all x8) (see also Planche 12, BB-DD); E-I, dorsal (E), ventral (F), lateral (G), posterior (H) and anterior (I) views of the sixth specimen (x6); J-N, dorsal (J), ventral (K), lateral (L), posterior (M) and anterior (N) views of the seventh specimen (x7.8); O-V, dorsal (O), lateral (P), ventral (Q), lateral open (R), anterior (closed S, x18; open T, x12) views of the eighth specimen (x18); laterodorsal view (U, x19) and detail of U (V, x83) showing protegular shell; W, Y-BB, dorsal (W), ventral (Y), lateral (left, Z; right, AA, x10.7), anterior (BB) and anteroventral (CC) views of the ninth specimen (x17), X, detail of W showing auricles and pedicle (x21); DD-II, dorsal (DD), lateral slightly open (EE, HH), ventral (FF), anterior open (GG), views of the tenth specimen (x9.5), II, anterolateral view of the shell open showing lophophore (x18.5).





#### Planche 14.

**A-G**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00050; A, photograph of glass tube, with one articulated specimen fixed to a light blue card, and the card-board to which was probably originally glued (A, x0.7; B, x1.6); C-G, dorsal (C, x15), lateral (closed, E, x16; open, F, x15) and anterior (open, G, x21) views of this specimen (B, x1.6); D, detail of C (x26.5) showing rather coarse and nodose radial ribs and few growth lines (C, E-F), and lophophore (G).

**H-L**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00081; H, five articulated specimens fixed to a light blue card (x1.5); I-J, dorsal (I) and ventral (J) views of the second and third specimens respectively showing rather coarse and nodose radial ribs and few growth lines (x2.5); K, dorsal view of the fourth specimen showing finer and more numerous radial ribs than those of the two previous and smaller specimens, and few growth lines (x3); L, detail of K (x4.4).

**M-V**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00100; M, two articulated specimens fixed to a light green card (x1.6); N, ventral view of the smaller specimen (x4); O, Q, R, S-V, dorsal (O, x5); posterior (Q, x5), lateral (close, R, x5; open, V, x4.2) and anterior (open, S and U, x6; T, x4) views of the bigger specimen; P, enlargement of the posterior area with pedicle splitting into fine rootlets (x9; see also O, Q-R).

**W-Z**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00132; W, articulated specimen fixed to a glass-slide with a card of bright black colour below plus a loose ventral valve and a dorsal (x1.4); X-Y, dorsal view of the articulated specimen (x2.8; detail in Y, x5); Z, enlargement of cardinalia and ring like loop contrasted against a small blue card placed below it (x10).

**AA-II**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-00103; AA, a disarticulated ventral valve and a dorsal probably belonging to the same disarticulated specimen, fixed (only the dorsal) to a card introduced in a glass-tube (x1.7); BB-CC, exterior of the ventral valve showing rather coarse and nodose radial ribs and few growth lines (BB, x9; detail in CC, x33); DD-EE, ventral interior showing umbonal area and teeth (DD, x9; detail in EE, x24); FF-II, dorsal interior showing cardinalia in ventral (FF, x9), anteroventral (GG, x11.2) and posteroventral (HH, x7.8; enlargement in II, x20) views showing cardinalia and loop with transverse band ventrally arched (GG, HH-II).



## Planche 15.

**A-C**, *Terebratulina retusa* (LINNAEUS, 1758), ML-MAL-01292; A, four articulated specimens fixed to a light brown card (x1.5); B-C, dorsal (B) and ventral (C) views of the third and second specimens respectively showing rather coarse and nodose radial ribs and few growth lines (B, x2.6; C, x2.9).

**D-G**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00118; one articulated specimen and a ventral valve fixed to a light blue card plus a loose ventral valve and two dorsal (D, x1.4); E, enlargement of dorsal interior of the shell in the right end in D showing cardinalia, broken loop and mantle canal system (x3.2); F, enlargement of cardinalia and ring like loop contrasted against a small blue card placed under it (x5); G, detail of umbonal area of the second disarticulated ventral valve in D, showing suberect beak, relatively large foramen, disjunct deltidal plates, pedicle collar and hooked teeth (x2.8).

**H-T**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00044; H, photograph of the old label, x1; I, photograph of the text written by hand in the reverse of the card (x0.5); J-K, ventral (I) and dorsal (J) interiors of disarticulated specimen (x1.3) (This specimen is not a *T. septentrionalis* as it is written in the label (H) but a *Magellania venosa*, see text and Planche 45R-AA); L-M, two specimens, one articulated and the other disarticulated, fixed to a card (L), x2.2; M, detail of the loop (x7); N, photograph of the text written by hand in the reverse of the card (x1). O-T, two disarticulated specimens fixed to a card (O, x2); P, photograph of the text written by hand in the reverse of the card (x1.5); detail of the loops (Q, x10; R, x7.7) and the posterior sector of both disarticulated ventral valves (S, x7.5; T, x6.5).

**U-GG**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00049; U, photograph of the old label, x1; V, two specimens, one articulated and the other disarticulated, fixed to a card (x1.3); W-CC, dorsal (W), ventral (X), lateral (Y and Z), posterior (AA), anterior (closed, BB and slightly open CC) views (x1.5) of the articulated specimen; DD, interior of the ventral valve (x1.5); EE, detail of the posterior sector, slightly tilted, of the ventral valve (x5); FF, interior of the dorsal valve (FF, x2.5) and detail of the cardinalia and broken loop (GG, x5).



## Planche 16.

**A-W**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00043; A, photograph of the old label (x0.8); B, photograph of two articulated specimens fixed to a card (x0.8); C, photograph of the text written by hand in the reverse of the card (x1); D-G, dorsal (D), posterior (E), anterior (F) and lateral (G) views of the bigger specimen fixed to card (x1.6); H-I detail of the posterior sector of this specimen (H, x5; I, slightly rotated, x5); J, detail of the external ornamentation in the dorsal valve of this specimen (x7.5); K-P, dorsal (K), ventral (L), anterior (N), posterior (O), and lateral (M and P) views of the smaller specimen fixed to card (x2); Q, detail of the posterior sector of this specimen (x8.8); R, posterodorsal view of the smaller specimen (x2.5); S, anterior view with the shell partially open (x3.2); T-W, a disarticulated specimen fixed to a card (T, x0.9); U, photograph of the text written by hand in the reverse of the card (x0.9); V, detail of the posterior sector of the ventral valve (x3.2); W, detail of the loop contrasted against a small black card placed under it (x6).

**X-FF**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00045; X, disarticulated ventral valve and a dorsal probably belonging to the same disarticulated specimen, fixed to a light blue card introduced in a glass-tube glued to a card-board with an old label attached to it (x0.7); Y, text written by hand in the reverse of the card (x1); Z, AA-BB, ventral (Z), anteroventral (AA) and posterior (BB) views of dorsal valve interior (x2); CC, detail of Z (x5.5); DD-FF, dorsal (DD), and posterodorsal (EE) views of ventral valve (x1.5); FF, detail of DD (x3.5).

**GG-MM**, *Terebratulina septentrionalis* (COUTHOUY, 1838), ML-ZOO-MAL-00120; GG, ventral valve and a dorsal probably belonging to the same specimen, fixed (only the ventral, the dorsal is loose inside the tube) to a light blue card (x0.6); HH, ventral valve interior in anterodorsal view (x1.8); II detail of HH, slightly tilted (x2.6); JJ-MM, posteroventral (JJ, x1.9), posterior (KK, x1), ventral (LL, x1.8) and exterior views (MM, x1.6) of dorsal valve.

*Cerebratulina septentrionalis* Couthouy  
Localité Faroues de la Mer Noire



B



A



E



H

Exp. de l'Hirondelle  
3 Aout 1889  
*Cerebratulina septentrionalis*  
Couthouy.  
N. 77.

C



D



F



I



J



N



O



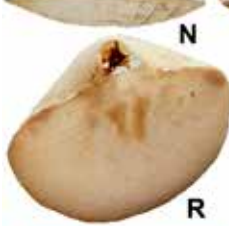
K



L



M



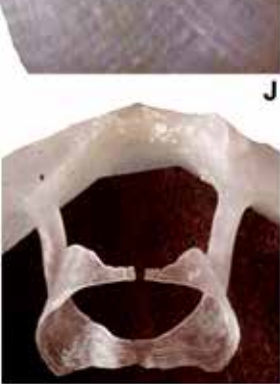
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S



Q



V



T

Hirondelle 3 Aout 1887.  
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Couthouy

U



P



W



X

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*Cerebratulina septentrionalis*  
Couthouy

Y



DD



Z



CC



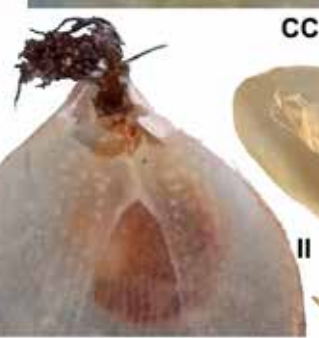
AA



EE



GG



II



JJ



BB



FF



HH



KK



LL



MM



MM

## Planche 17.

**A-C**, *Terebratulina retusa* (LINNAEUS, 1758); photographs of three card-boards with an old label with the name '*Terebratulina caput serpentis (sic)* Linné sp.' and 'Mancha', 'Golfe de Gascogne' and 'La Manche' as localities but without any label with registered number fixed in the reverse of them, and from which four glass-tubes seems to have been detached (x0.6).

**D**, *Terebratulina septentrionalis* (COUTHOUY, 1838); photograph of a card-board with an old label with the name '*Terebratulina septentrionalis* COUTH' and 'Terre Neuve' as locality. No label with registered number was fixed in the reverse of the card board, and from which a glass-tube have been detached (x0.6).

**E-DD**, *Eucalathis tuberata* (JEFFREYS, 1878), ML-ZOO-MAL-00108; E, five articulated specimens, two ventral valves and three dorsal fixed to a card (x2.4); F-H, dorsal (F) and lateral (G) views of the specimen attached in the left side of the card (E), and H, detail of G (marked by white rectangle), showing external surface with numerous ribs, which are tuberculate, and growth lines (F, x3.6; G, x4.7; H, x25); I-K, ventral (I, x9.3), anterior (J, x9.3) and lateroventral (K, x14.8) views of second specimen from the left (E) showing ribs, which are tuberculate, and growth lines; L, dorsal view of the third specimen (x8.2); M, ventral interior of the fourth specimen (x11.2); N-Q, ventral (N, x14.8), posteroventral (P, x18.5) and posterior views (Q, x14.6) of the fifth specimen, a disarticulated dorsal valve; O, detail of N showing cardinalia and loop with transverse band dorsally directed (x33); R, dorsal view of the sixth specimen (x14), S-T, detail of anterior commissure of the sixth specimen in dorsal (S, x33.5) and anterodorsal views (T, x47.8); U-V, ventral (U, x13.2) and lateroventral (V, x12.7) views of the seventh specimen showing the external ornamentation; W-Y, ventral (slightly tilted) (W, x8), ventral (X, x7.5) and anteroventral (Y, x7.5) views of the eighth specimen, a dorsal valve, showing cardinalio and lophophore; Z, detail of W showing the cardinalio (x23.2); AA-BB, ventral interior (AA, x13.5) and slightly tilted view (BB, x13.5) of the ninth specimen, a disarticulated ventral valve, showing pedicle aperture, small deltidial plates, pedicle collar and teeth; CC-DD, ventral (CC, x9) and posteroventral (DD, x18) views of the tenth specimen, a disarticulated dorsal valve.

**EE-MM**, *Eucalathis tuberata* (JEFFREYS, 1878), ML-MAL-01282; EE, three articulated specimens, a ventral valve and a dorsal probably belonging to the same specimen, fixed to a card (x0.9); FF, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.6). GG-HH, dorsal (GG, x9) and posterior (HH, x7.9) views of the specimen attached in the left side of the card (EE); II, interior of the dorsal valve, second specimen (x7.3); JJ, interior of the ventral valve, third specimen from the left side (x4.2); KK-LL, dorsal (KK) and posterodorsal (LL) views of the fourth specimen (both x8.6) showing ornamentation, pedicle aperture, pedicle collar and slightly auriculate shell; MM, ventral exterior of the fifth specimen showing outline and ornamentation (x11.7).





## Planche 18.

**A-EE**, *Eucalathis ergastica* FISCHER and CÆHLERT 1890, ML-ZOO-MAL-00135; A, one articulated specimen, three ventral valves and one dorsal fixed to a card, together with two loose articulated specimens and a disarticulated dorsal valve (x1.5); B-F, dorsal view of the ventral valve in the left side of the card (B, x4.8), C-D, details of B showing pedicle aperture, small deltidial plates, pedicle collar and teeth (both x11.7), E, ventral interior slightly tilted showing muscles and pedicle collar (x4.8), F, posterior view of same ventral valve (x6.9); G-K, ventral (G, x6.8), posterior (I, x6.8), posteroventral (J, x6.8) and lateroventral (K, x12.7) views of the second specimen (a dorsal valve), H, detail of G showing cardinalia and loop with transverse band dorsally directed (x20); L-N, dorsal (L, x7.3) and posterodorsal (M, x7.3) views of the third specimen and detail of the posterior region of shell showing ornamentation, pedicle aperture, pedicle collar and slightly auriculate shell (N, x21); O-R, dorsal (O, x5.7), anterodorsal (P, x5.7) and posterior (R, x5.7) views of the fourth specimen (a ventral valve), Q, detail of P (x19.3); S-U, dorsal (S, x7) posterior (T, x7) and lateral (U, x6.2) views of the fifth specimen, that on the right side of the card; V-W, dorsal view (V, x7.9) and enlargement of the umbonal area, slightly tilted of the sixth specimen, a ventral valve, showing pedicle aperture, small deltidial plates, pedicle collar and teeth (W, x10.5); X-BB, ventral (X, x7.9), ventral (slightly tilted) (Y, x7.9), anterior (AA, x9) and lateroventral (BB, x13.2) views of the seventh specimen, a dorsal valve, showing cardinalio and lophophore; Z, detail of Y (x17.3); CC-EE, dorsal (CC, x8.2), posterior (DD, x8.2) and anterior (slightly tilted) (EE, x6.5) views of the eighth specimen.

**FF-HH**, *Eucalathis tuberata* (JEFFREYS, 1878); photographs of two card-boards with an old label with the name '*Eucalathis tuberata* JEFFREYS sp.' and 'Nord de l'Espagne; Prof 1226 à 2018', and 'En face le Cap Gros Mediterranean 86 m.' as localities but without any label with registered number fixed in the reverse of them, and from which the glass-tubes have been detached (x0.5); GG, enlargement of the old label fixed to first card-board (x0.7).

**II**, *Eucalathis ergastica* FISCHER and CÆHLERT 1890; photograph of a card-board with an old label with the name '*Eucalathis ergastica* FISCH. et CÆHL.' and 'Cap Spartel, Prof. 717' as locality. No label with registered number was fixed in the reverse of card board, and from which a glass-tube have been detached (x0.6).



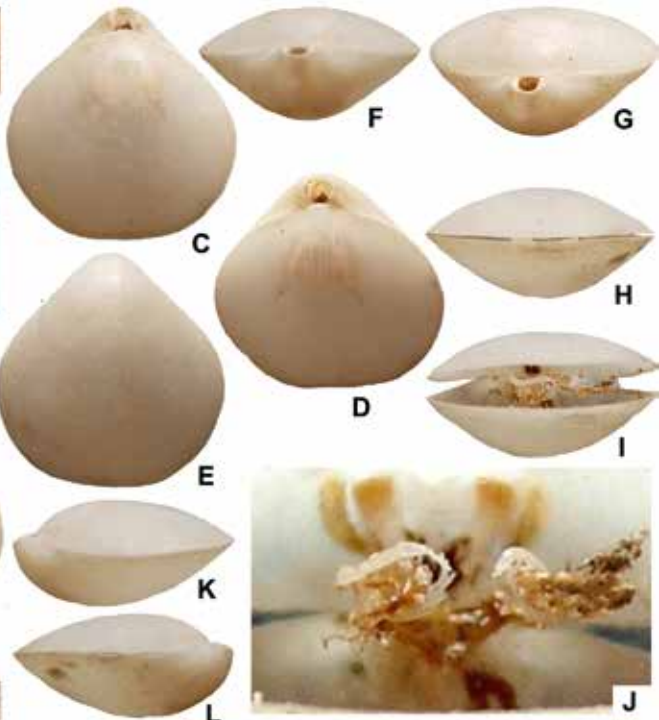
## Planche 19.

**A-N**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00002; A, photograph of the old label, x1; B-J, three articulated specimens fixed to a card (B, x1.5); C-I, dorsal (C, and slightly rotated, D), ventral (E), posterior (F, and slightly rotated, G), anterior [with the shell closed (H), slightly open (I) and detail (J, x6.5)], lateral (K and L) views of the specimen fixed in the left side of the card (x2.5); M, dorsal view of the specimen in the middle of the card (x3); N, dorsal view of the specimen fixed in the right side of the card (x3.5).

**O-U**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00014; O, photograph of the old label, x1; P, photograph of the text written by hand in the reverse of the card (x2,8); Q, two disarticulated and eroded dorsal valves fixed to a card (x3.2), R-S, anteroventral and detail in ventral view of the cardinalia of the biggest valve (x3.6 and x5 respectively), T-U, ventral and anteroventral views of the cardinalia of the smallest valve (x5 and x5.3 respectively).

**V-Z**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00011; V, photograph of the old label, x1; W, photograph of the text written by hand in the reverse of the card (x2); X, a disarticulated specimen fixed to a card (x2), Y-Z, detail of the posterior sector of the interior of the ventral valve (Y, x5.8) and the cardinalia (Z, x8).

*Macandrewia cranium*. Muller  
Localité Cap Bojador. Prof.

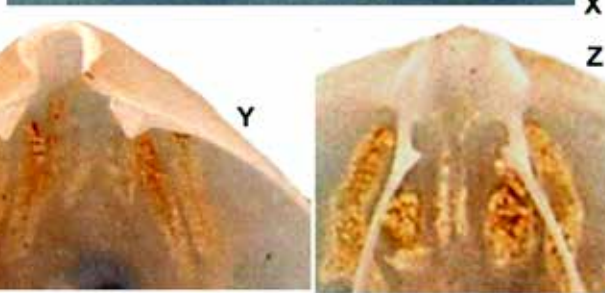
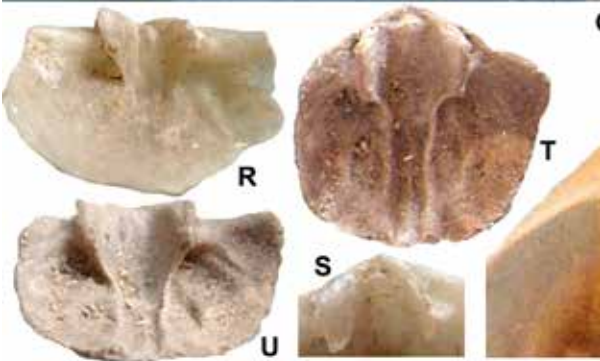


*Macandrewia cranium*. Muller  
Localité Côte d'Espagne. Prof. 392-1960

*Macand. cranium*,  
Côte d'Espagne

*Macandrewia cranium* Mull. sp.  
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Prof. Côte d'Espagne



## Planche 20.

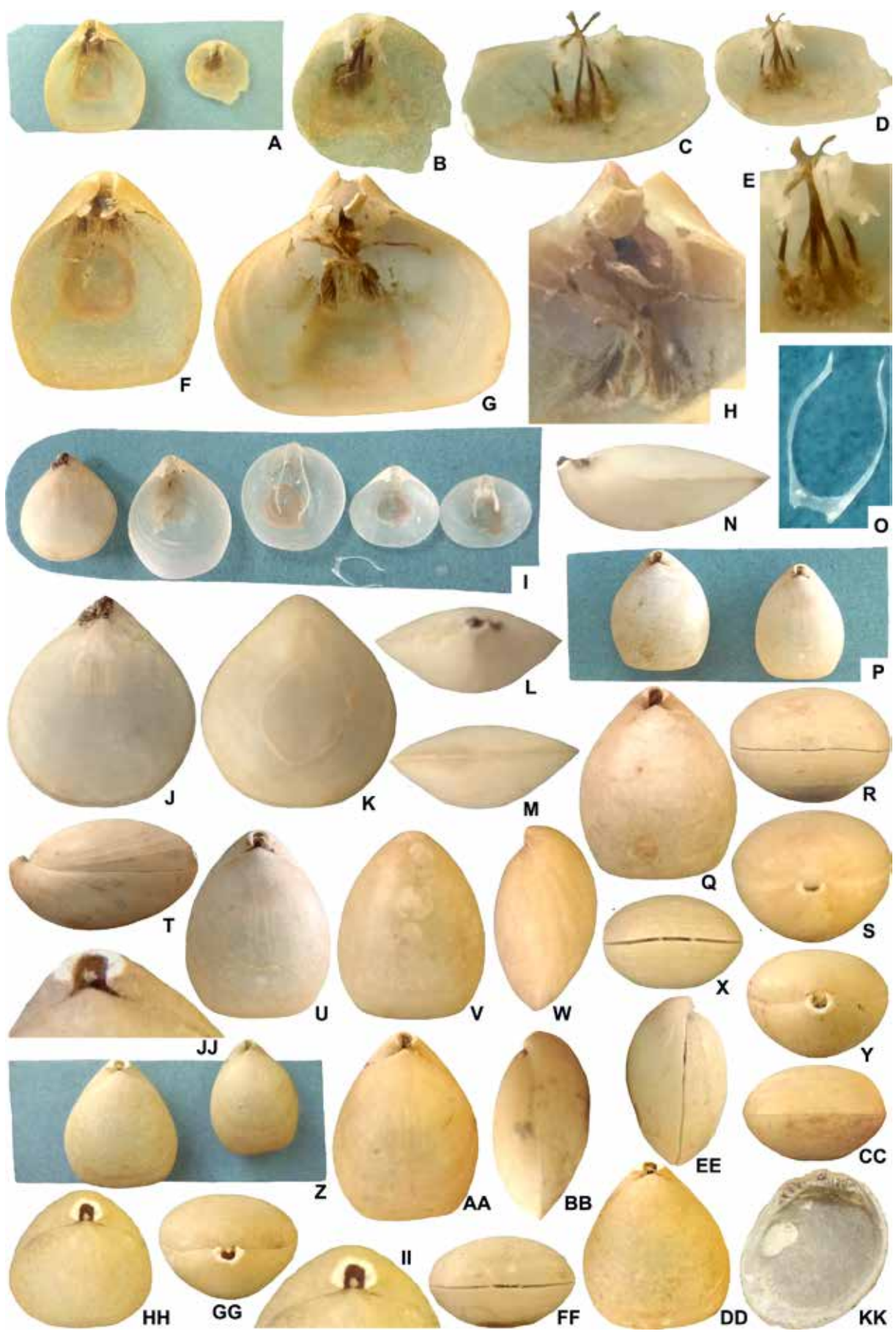
**A-H**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00093; A, a disarticulated ventral valve and a dorsal, partly broken, fixed to a light blue card (x1); B-E, ventrolateral (B, x2.4), anteroventral (C, x3.7; D, x2.5; E, x5.5) views of the dorsal valve; F-H, dorsal (F, x2) and anterodorsal (G, x3) views of the ventral valve, and detail of G, slightly tilted, showing teeth and short dental plates (H, x4.4).

**I-O**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00099; I, a disarticulated dorsal valve and a ventral fixed to a card plus an articulated specimen and another disarticulated dorsal valve and a ventral loose, and part of a loop, inside a tube (x1.5); J-N, dorsal (J), ventral (K), posterior (L), anterior (M) and lateral (N) views of the articulated specimen (all x6); O, enlargement of the preserved part of the loose loop (x5).

**P-Y**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00106; P, an articulated specimen fixed to a card (left specimen) and another articulated specimen loose inside the tube (specimen in the right); Q-T, dorsal (Q), anterior (R), posterior (S) and lateral (T) views of the articulated specimen fixed in the left side of the card (all x2), U-Y, dorsal (U), ventral (V), lateral (W), anterior (X) and posterior (Y) views of the articulated specimen in the right side of P (all x2).

**Z-JJ**, *Macandrevia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00109; Z, two articulated specimens fixed to a card (x1.2); AA-CC, dorsal (AA), lateral (BB) and anterior (CC) views of the articulated specimen fixed in the right side of the card (all x2); DD-JJ, dorsal (DD), lateral (EE), anterior (FF) posterior (GG) and posterodorsal (HH) views of the articulated specimen in the left side of Z (all x1.7), II-JJ details of HH (II, x2.5; JJ, slightly tilted laterally, x4.3).

**KK**, 'arcoïd' bivalve (x2.6).



## Planche 21.

**A-F**, *Macandrewia cranium* (MÜLLER, 1776), ML-ZOO-MAL-00110; A, a disarticulated dorsal valve fixed to a light blue card and a ventral, probably belonging to the same specimen, loose in the same glass-tube (x1.3); B, interior of dorsal valve (x3), C, interior of ventral valve (x2.8), D-E, anterodorsal view (D, x2.6) and detail (E, x6.5) of ventral valve interior; F, detail of B (x10).

**G-I**, *Macandrewia cranium* (MÜLLER, 1776), ML-MAL-01289; G, an articulated specimen fixed to a card (x1.2); H-I, dorsal (H), and anterior, slightly tilted dorsally, (I) views of the specimen (x2.6).

**J**, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.8).

**K-O**, *Macandrewia cranium* (MÜLLER, 1776), ML-MAL-01278; K, photograph of glass tube, with a ventral valve fixed to a light brown card and two disarticulated dorsal valves and a ventral loose inside a glass-tube (x1); L, a ventral valve fixed to a card and two disarticulated dorsal valves (one placed over the fixed ventral valve) and a ventral loose inside the glass-tube (x1.3); M, interior of the dorsal valve on the right side of the card in L, (x2.3); N, detail of M (x4.4); O, anterior view of the cardinalia (x2.5).

**P-R**, ventral (P, x1.3), lateroventral (Q, x2) views of the dorsal valve of the specimen located in the middle of the card, and detail of P (R, x6.5).

**S-U**, dorsal (S, x2.4), posterodorsal (T, x1.8) and anteroventral (U, x1.9) views of the ventral valve fixed in the middle of the card (L).

**V**, dorsal view of the ventral valve located in the left side of the card (x2.2).

**W**, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.6).

**X**, photograph of a card-board with an old label with the name '*Macandrewia [sic] cranium* MÜLLER' written on it and 'Cap Bojador' 'Prof. 782 m' as locality and depth, without any label with registered number fixed in the reverse of it, and from which a glass-tube seems to have been detached (x0.6).





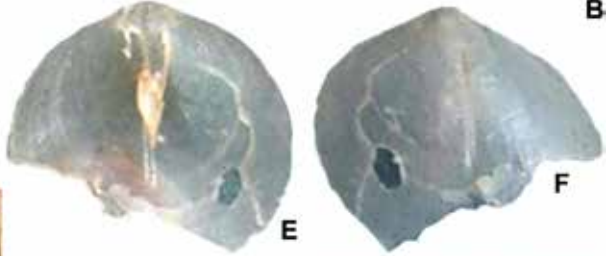
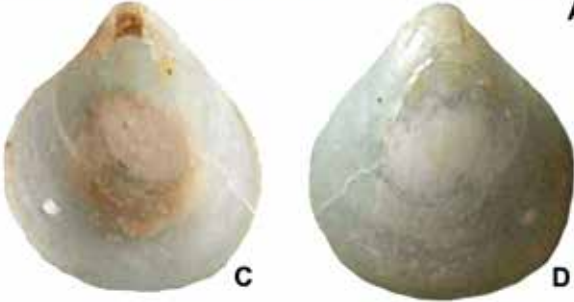
## Planche 22.

**A-F**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00006; A, photograph of the old label, x1; B-F, disarticulated specimen fixed to a card (B, x2); internal (C) and external (D) views (x7.8) of the ventral valve; internal (E) and external (F) views (x6) of the dorsal valve (broken anterolaterally).

**G-T**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00008; G, photograph of the old label, x1; H-R, disarticulated specimen fixed to a card (H, x1.7); I, photograph of the text written by hand in the reverse of the card (x2.8); internal (J) and external (K) views (x1.8) of the ventral valve; dorsal (L, x5) and posterodorsal (M, x3) views of the posterior sector of the ventral valve; posterior (N, x2.5) and anterodorsal views of the ventral valve (O, x2.5); P-T, dorsal interior showing loop (with the transverse band broken while handling the specimen, P, x2.5; Q, x4,7; or still complete, S, x2.5; T, x5), and detail of the cardinalia (R, x10.3).

**U**, photograph of a card-board with an old label with the name '*Dallina septigera* LOVÉN sp.' and 'Cap Bojador' and 'Prof. 640-782' as locality and depth, without any label with registered number fixed in the reverse of it, and from which a glass-tube seems to have been detached (x0.6).

*Dallina septigera*. Lovén  
Localité Cap. Bojador. Prof. 640-



*Dallina septigera*. Lovén sp.  
Localité Cap. Bojador. Prof. 640-782



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Prof. 640-782.  
Loc. Sahara - Cap Bojador.



### Planche 23.

**A-Q**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00010; A, photograph of disarticulated specimen (x0.9); B, photograph of the text written by hand in the reverse of the card (x0.7); C-G, dorsal (C, x1.8), posterodorsal (E, x1.6) and anterodorsal (F, x1.6) views of the ventral valve, D, detail of C (x4), G, detail of F (x5.5); H-J, ventral (H) and anteroventral (I) views of the dorsal valve (x1.9); K-Q, dorsal (K), lateral (L and M), anterior (N), anterodorsal (O), posterior (P) and posterodorsal (Q) views of both valves fit together as originally articulated (x1.8).

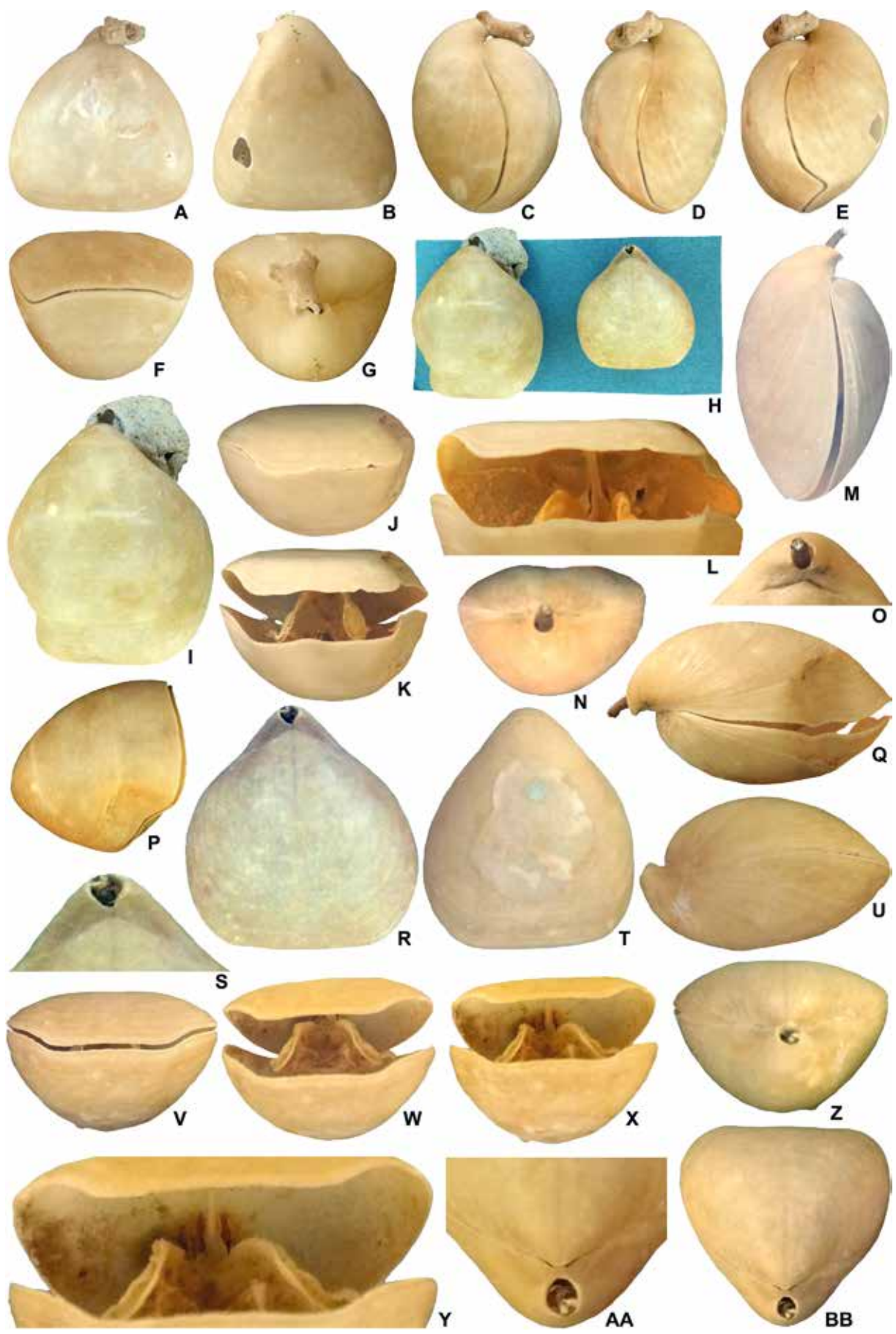
**R-GG**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00017 (see also Planche 24A-G); R, photograph of the two specimens of this lot (x0.9); S, photograph of the text written by hand in the reverse of the card (x0.7); T-X, dorsal (T), ventral (U), lateral (V), anterior (W) and posterior (X) views of the valves of the specimen on the left in R, fit together as originally articulated (x1.5); Y, anterodorsal view of ventral valve (x1); Z, detail of Y (x4); AA-GG, interior of dorsal valve viewed ventrally (AA, x1.5), anteroventrally (CC, x0.9) and slightly rotated laterally (FF, x1.4), BB, detail of AA (x4.5), DD and EE, details of CC (x1.8 and x3), GG, detail of FF (x3).



## Planche 24.

**A-G**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00017 (see also Planche 23R-GG); dorsal (A), ventral (B), lateral (C and D), lateral slightly tilted (E), anterior (F) and posterior (G) views of the articulated specimen on the right side in Planche 23R (all x1.3).

**H-BB**, *Fallax dalliniformis* ATKINS, 1960, ML-ZOO-MAL-00116; H, photograph of the two specimens of the lot (x0.9); I-P, ventral (I, x1.6), anterior (closed, J; slightly open, K, both x1.5), lateral (M, x1.6 and Q, x1.5), posterior (N, x1.4), exterior slightly tilted (P, x1) views of the articulated specimen fixed on the left side of the card (H), L, detail of anterior commissure with dorsal valve on top showing part of median septum and lophophore (x2.5), O, detail of ventral umbo (x1.9); R-BB, dorsal (R), ventral (T), lateral (U), anterior (closed, V; slightly open, W, and slightly tilted posteroventrally, X), posterior (Z), and posterodorsal (BB) views of the articulated specimen in the right side in H (all x2), S, detail of R (x4.5), Y, detail of anterior commissure showed in X, with dorsal valve on top showing part of median septum and lophophore (x3.8), AA, detail of BB (x3.3).



## Planche 25.

**A-J**, *Laqueus rubellus* (SOWERBY, 1846), ML-MAL-01298; A, text written in the bottom of the box : '*Laqueus rubella* SOW' (x0.5); B, two disarticulated dorsal valves and two ventral, one broken into three pieces (x0.87); C-D, exterior (C) and interior (D) of the dorsal valve on the left of B (both x1.9); E-F, exterior (E) and interior (F) of the second dorsal valve (both x1.9); G, detail of F (x3.6); I-J, interior (I) and exterior (J) and of the ventral valve on the right side of B (both x1.9), H, detail of I (x3.7).

**K-BB**, *Frenulina sanguinolenta* (GMELIN, 1790), ML-ZOO-MAL-00038; K, three disarticulated specimens fixed to a card (x3); L, photograph of the old label, x1; M-N, interior (M) and exterior (N) of the ventral valve fixed in the left side of the card illustrated in K (both x11); O-Q, ventral (O), anterior (P) and posterior (Q) views of the dorsal valve counterpart of the previous ventral valve (x8.5); R-U, ventral (R, x5.9) and posterodorsal (T, x6.8) of the ventral valve fixed on the middle of the card; S, detail of R (x15); U, anterior view of S (x15); V-X, ventral view of dorsal valve fixed on the middle of the card (V, x5.5) and counterpart of the previous ventral valve, W, detail of V (x22), X, detail of V, slightly tilted laterally (x8.9); Y-Z, dorsal view (Y, x11) and detail of the posterior region (Z, x23) of the ventral valve fixed on the right side of the card; AA-BB, ventral (AA) and posterior (BB) views of the dorsal valve fixed on the further right side of the card (both x12) and counterpart of the previous ventral valve.





## Planche 26.

**A-O**, *Frenulina sanguinolenta* (GMELIN, 1790), ML-ZOO-MAL-00039; A, C, glass-tube with a dorsal valve fixed to a light blue card and a ventral valve probably belonging to the same specimen, an articulated specimen and another dorsal valve and a ventral, of small size and probably belonging to the same specimen, loose inside the glass-tube (A, x1; C, x1.5); B, photograph of the old label (x1); D, text written in the reverse of the card (x2); E-K, dorsal (E), ventral (F), posterodorsal (G), posterior (I), anterior (J) and lateral (K) views (all x3.5) of the articulated specimen on the left side of C, H, detail of G (x4.7); L-M, interior of the ventral valve (L, x6) and the dorsal valve (M, x6) of the specimen on the right side on C; N-O, interior of the dorsal valve (N, x5) and the ventral valve (O, x5.3) of the specimen in the middle of C.

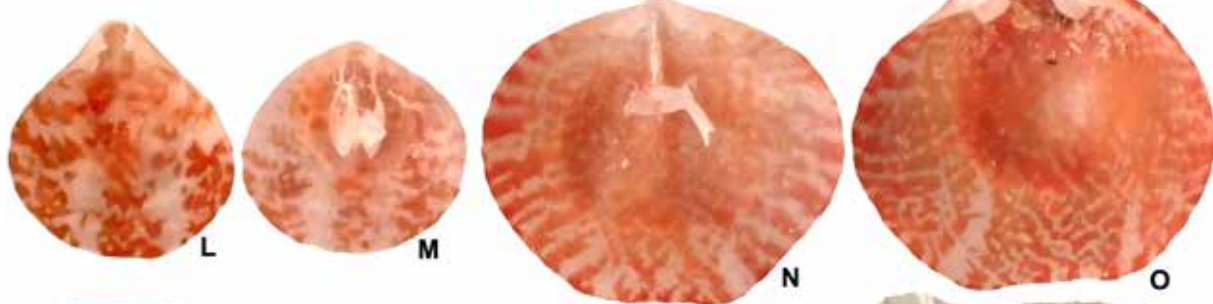
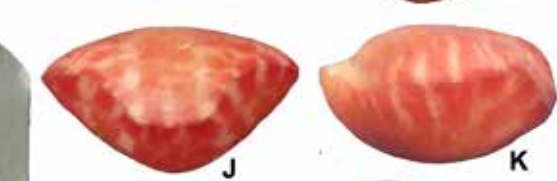
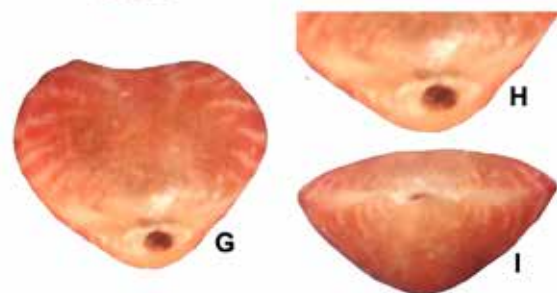
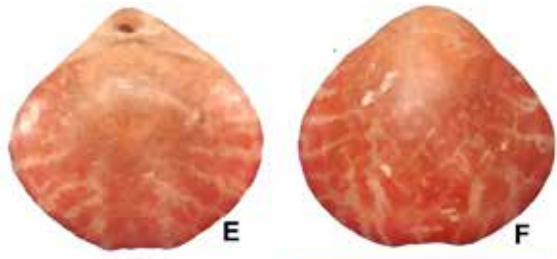
**P-BB**, *Pictothyris picta* (Dillwyn, 1817), ML-MAL-01287; P, photograph of the articulated specimen over the brown card to which probably was originally glued (x1); dorsal (Q), ventral (S), lateral (T), dorsal slightly tilted posteroventrally (U), posterior (V) and anterior (W) views of the specimen (all x1.7), anterior view with the specimen slightly open (X) and slightly tilted lateroventrally (both x2); R, detail of Q (x6.8); Z, detail of U (x4.7); AA, detail of Z (x9.4); BB, photograph of the text written by hand in piece of paper introduced also in the glass tube (x0.7).



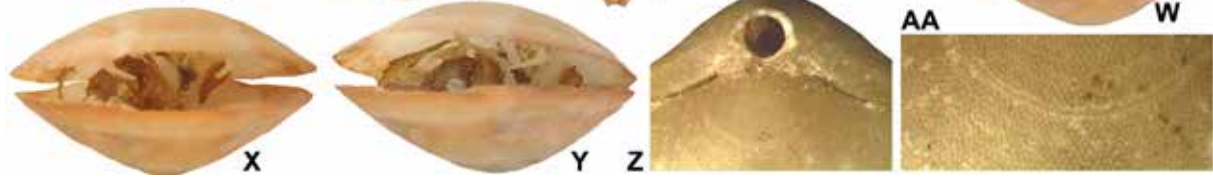
*Cerbratella rubicunda* Solander.  
Locality: Chatham Islands. 16 Dec. 34.



*C. rubicunda*  
1/16 Calidonia.



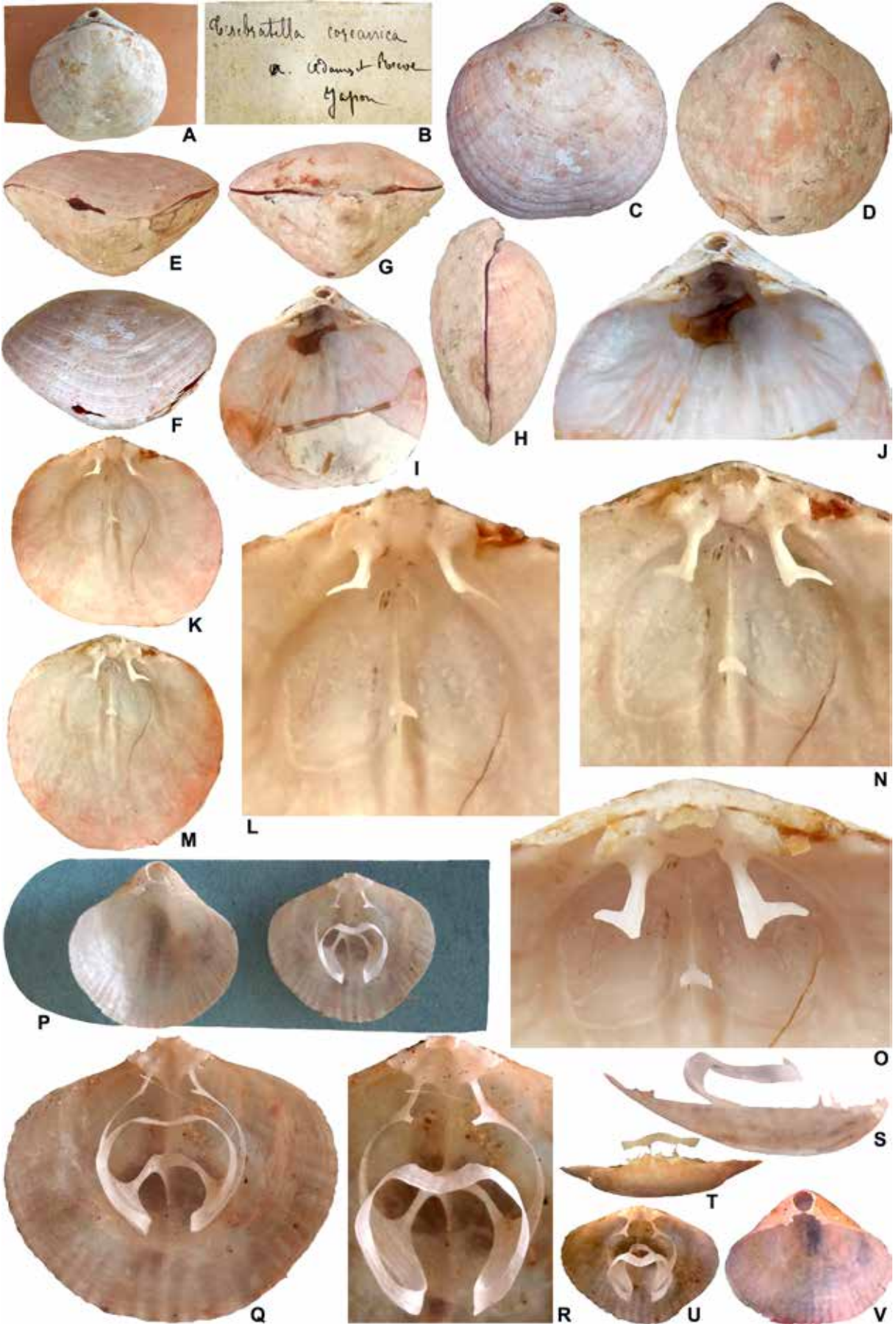
*Laguncula pictata*  
Cheng  
Japan



## Planche 27.

**A-O**, *Terebratalia coreanica* (ADAMS and REEVE, 1850), ML-ZOO-MAL-00042; A, photograph of the articulated specimen over the light brown card to which probably was originally glued (x0.6); B, text written by hand in the reverse of the card (x0.7); Z, C-H, dorsal (C), ventral (D), anterior (E), anterior slightly tilted dorsally (F), posterior (G) and lateral (H) views of the specimen with the valves articulated (all x1); I-N, ventral (I), dorsal (K) and dorsal slightly tilted anteroventrally (M) of valves once disarticulated (all x1); J, detail of I (x1.5); L, detail of K (x2.4); N, detail of M (x2.5); O, ventral view slightly tilted anteroventrally, of the posterior region of the dorsal valve (x2.8).

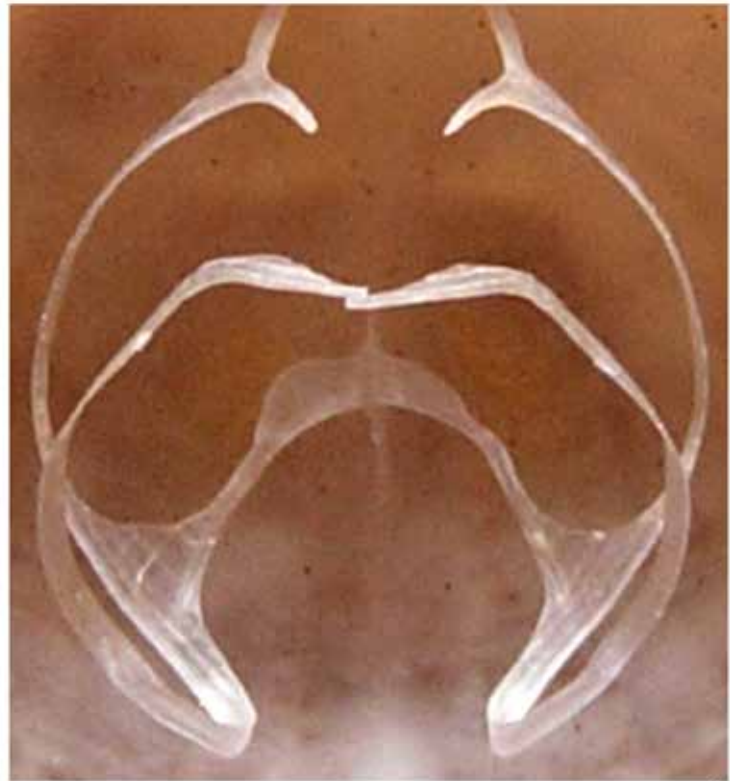
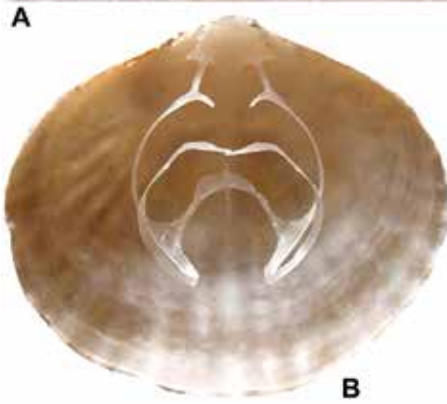
**P-V**, *Coptothyris grayi* (DAVIDSON, 1852), ML-ZOO-MAL-00111; P, a dorsal valve and a ventral probably belonging to the same specimen, fixed to a blue card (x1.4); Q-U, ventral (Q, x2.8), lateral (S, x2.6), posterior (T, x1.6) and ventral, slightly tilted posteroventrally (U, x1.3) views of the dorsal valve; R, enlargement of cardinalia and loop slightly tilted posterodorsally (x4). V, dorsal view slightly tilted posterodorsally of the ventral valve (x1.4).



**Planche 28.**

**A-M**, *Coptothyris grayi* (DAVIDSON, 1852), ML-ZOO-MAL-00041; A, photograph of the old label (x0.8); dorsal valve in ventral (B, x2.8), posterior (C, x2.8), lateral (D, x3.2) and anteroventral (E, x2.8) views; F, detail of the cardinalia (x8.4); G, detail of the loop (x9.7); H-L, ventral valve in lateral (H, x2.5), external (I, x1.7), anterior (J, x1.7), posterodorsal (K, x3,2) and dorsal (L, x2,7) views; M, detail of the posterior sector of the ventral valve (x5.8).

MUSEUM DE LAVAL  
*Cerebratella Grayi* *Schubert*  
Mus. du Japon. 1861. 130.



## Planche 29.

**A-AA**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00020; A, two articulated specimens, two dorsal valves and one ventral fixed to a light blue card (x1.4); B, text written by hand in the reverse of the card (x1.4); C-G, ventral (C) and posterior (D) views of the articulated specimen fixed to the left side of the card (A) (both x7.5), lateral (E, x9) and anterior (F, x12.2) views of same specimen, now open; G, detail of F (x25.3); H-J, dorsal (H, x6.25), dorsal with shell slightly open (I, x7) of the second articulated specimen; J, anteroventral view of dorsal interior of the previous specimen (x16.5); K-N, dorsal (K), dorsal slightly tilted anterodorsally (L) and posterior (M) views of the ventral valve fixed in the middle of the card (A), N, anterior view slightly tilted dorsally showing teeth (x8); O-V, ventral (O, x7.2), ventral slightly tilted posteroventrally (P-S, both x7.2), anteroventral (Q, x13.6), posteroventral (R, x13.6) and lateroventral (T, x10.8) views of the dorsal valve fixed next to last valve in A; U, detail of P (x19.7); V, detail of O (x23.8); W-AA, ventral (W), posterior (X), anterior (Y), posteroventral (Z) (the three x9.5) and lateroventral (AA, x15) views of the dorsal valve fixed on the right side of the card (A).





A

*Balisan. Prof. 100.  
loc: Cap Blanc*

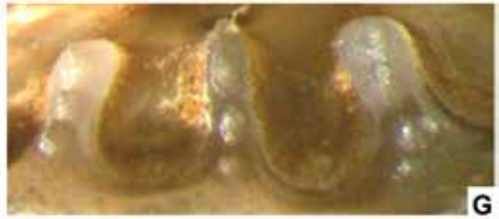
B



C



F



G



D



H



I



J



E



M



N



V



K



L



O



P



U



S



T



Q



W



Z



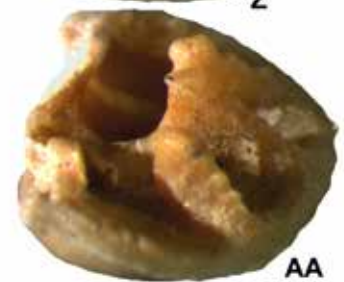
R



X



Y



AA

### Planche 30.

**A-K**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00055; A, two articulated specimens fixed to a glass-slide with a card of bright black colour below (x2); B-H, ventral (B, x8.3) and anteroventral views (D, with shell slightly open; E, with shell open, both x11.25) of the specimen in the left side in A; C, detail of B showing external ornamentation and endopunctae (x22); F, enlargement of the dorsal interior viewed anteroventrally (x12.7); G, detail of right tooth in F (x50); H, detail of F (x33.6); I-K, dorsal (I), lateral (J) and posterior (K) views of the specimen in the right side in A (the three x8.8).

**L-T**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00062; L, an articulated specimen and a ventral valve fixed to a light green card (x3.5); M-P, dorsal (M, x8.2), posterodorsal (N, x8), anteroventral with the shell open (O, x9.2) and lateral, with the shell slightly open (P, x7.5) of the articulated specimen; Q, detail of O (x40.5); R, detail of the lateral septum tuberculate on the anterior edge (x62.5); S-T, dorsal (S, x8.5) and anterior (T, x8.3) views of the disarticulated valve.

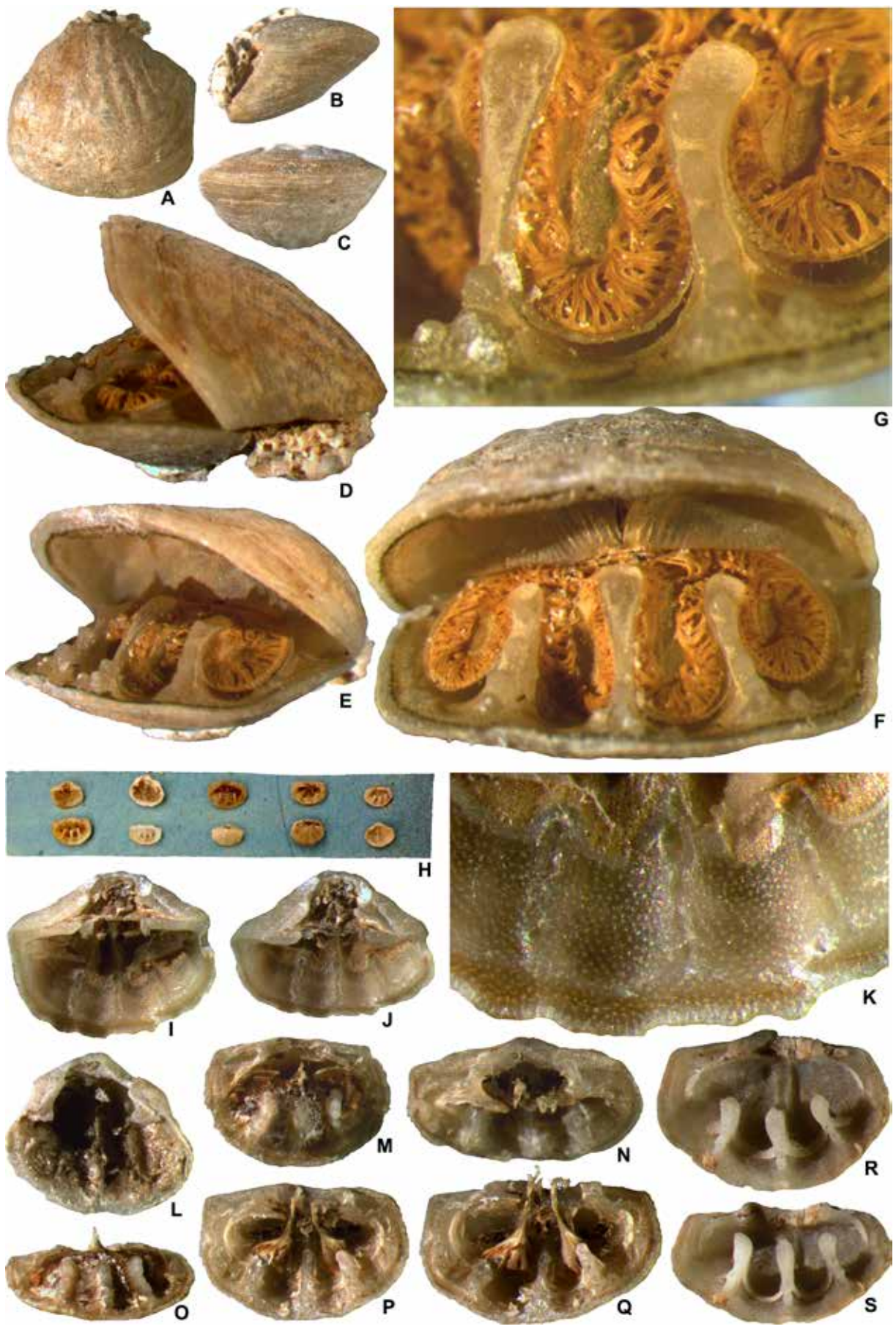
**U-X**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00070 (see also Planche 31A-G); U, the four articulated specimens of the lot, which are loose in a glass-tube together with a green card to which possibly, were originally glued (x1.9); V, dorsal view of the second specimen in U (x5.5); W, ventral view of the third specimen (x6); X, posterodorsal view of the specimen in the right side in U (x5.9).



### **Planche 31.**

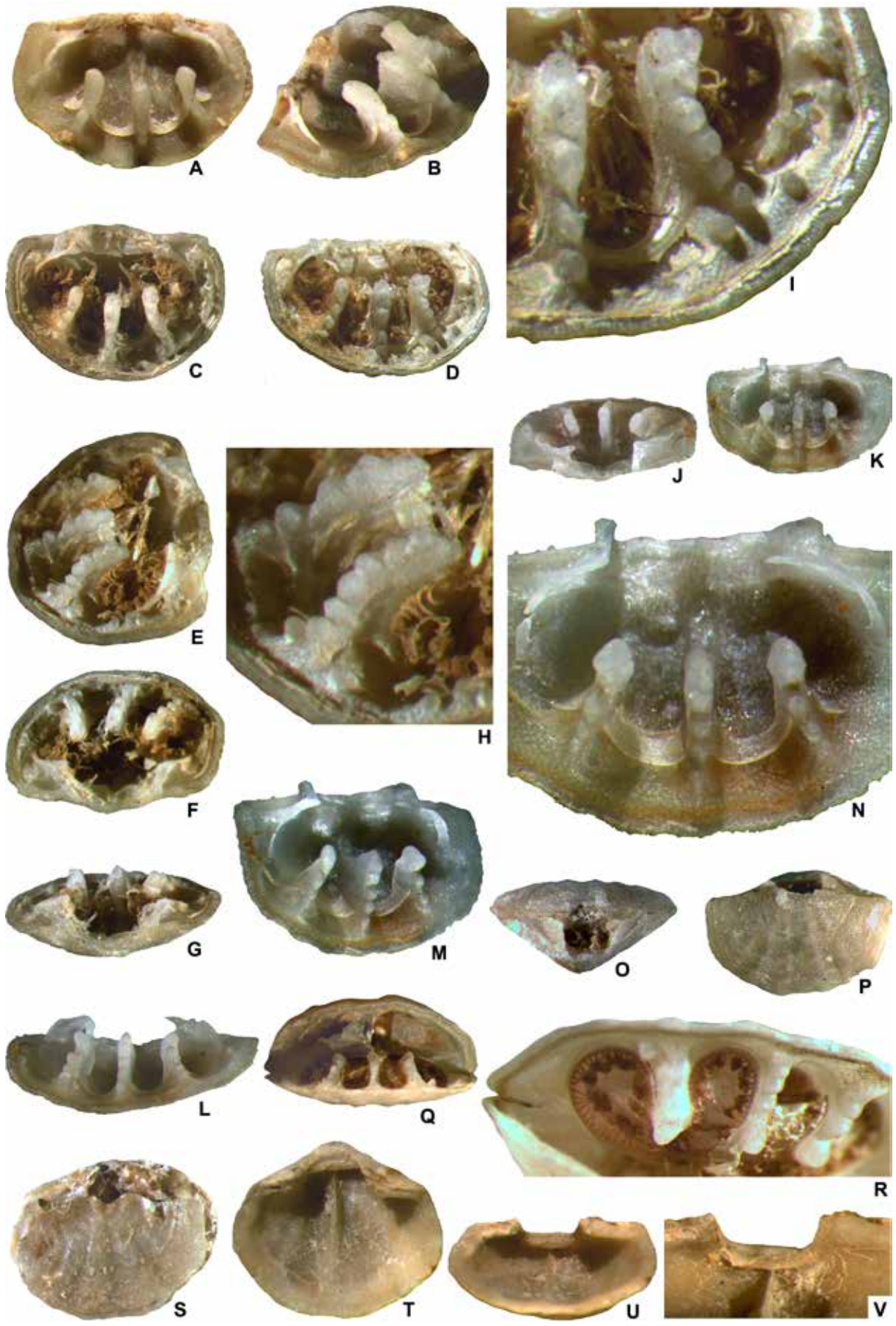
**A-G**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00070 (see also Planche 30, U-X); ventral (A, x5.9), lateral (B, x5) and anterior (C, x5.9) views of the specimen in the left side in Planche 30U; D-F, lateral (D, x15), lateroventral (E, x8) and anteroventral (F, x13) views of the same specimen with the shell slightly open; G, detail of F (x23).

**H-S**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00078 (see also Planche 32A-V); H, two articulated specimens, five dorsal valves and three ventral fixed to a light green card (x1.3); I-K, dorsal (I, x8.2) and posterodorsal (J, x8) views of the ventral valve fixed on the left upper corner of the card (H); K, detail of J (x25); L, dorsal view of the second ventral valve in the upper row in H (x8.5); M-O, ventral (M, x6), posteroventral (N, x7.6) and anteroventral (O, x6) views of the dorsal valve in the upper row in H; P-Q, ventral (P, x7.4) and anteroventral (Q, x8.6) views of the second dorsal valve in the upper row in H; R-S, ventral (R, x10.5) and anteroventral (S, x10) views of the dorsal valve in the right upper corner in H (see also Planche 32A-B).



## Planche 32.

**A-V**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00078 (see also Planche 31H-S); A-B, ventral (A, x10.75) and lateroventral (B, x11) views of the dorsal valve in the right upper corner in Planche 31H (see also Planche 31R-S); C-I, ventral (C, x7.8), anteroventral (D, x8), lateroventral (E, x10.2), posteroventral (F, x7.8) and slightly posteroventral (G, x7.8) views of the dorsal valve on the left lower corner in Planche 31H; H, detail of E (x21.2); I, detail of D (x24.5); J-N, posteroventral (J, x7.3), ventral (K, x7.3) and anteroventral (L, x11.3) views of the second dorsal valve on the low row in H (Planche 31); N, detail of K (x19.8); O-R, posterior (O, x7.4) and dorsal (P, x7.4) views of the articulated specimen fixed in the middle of the lower row in H (Planche 31); Q, anterior view of the previous specimen with the shell open and the ventral valve on top (x9.5); R, detail of the dorsal septa (x28.5); S, dorsal view of the articulated specimen fixed next to last valve in H (Planche 31); T-V, dorsal (T) and anterior (U) views (both x9.4) of the dorsal valve fixed on the right side of the lower row in H (Planche 31); V, detail of U (x13.3).



### Planche 33.

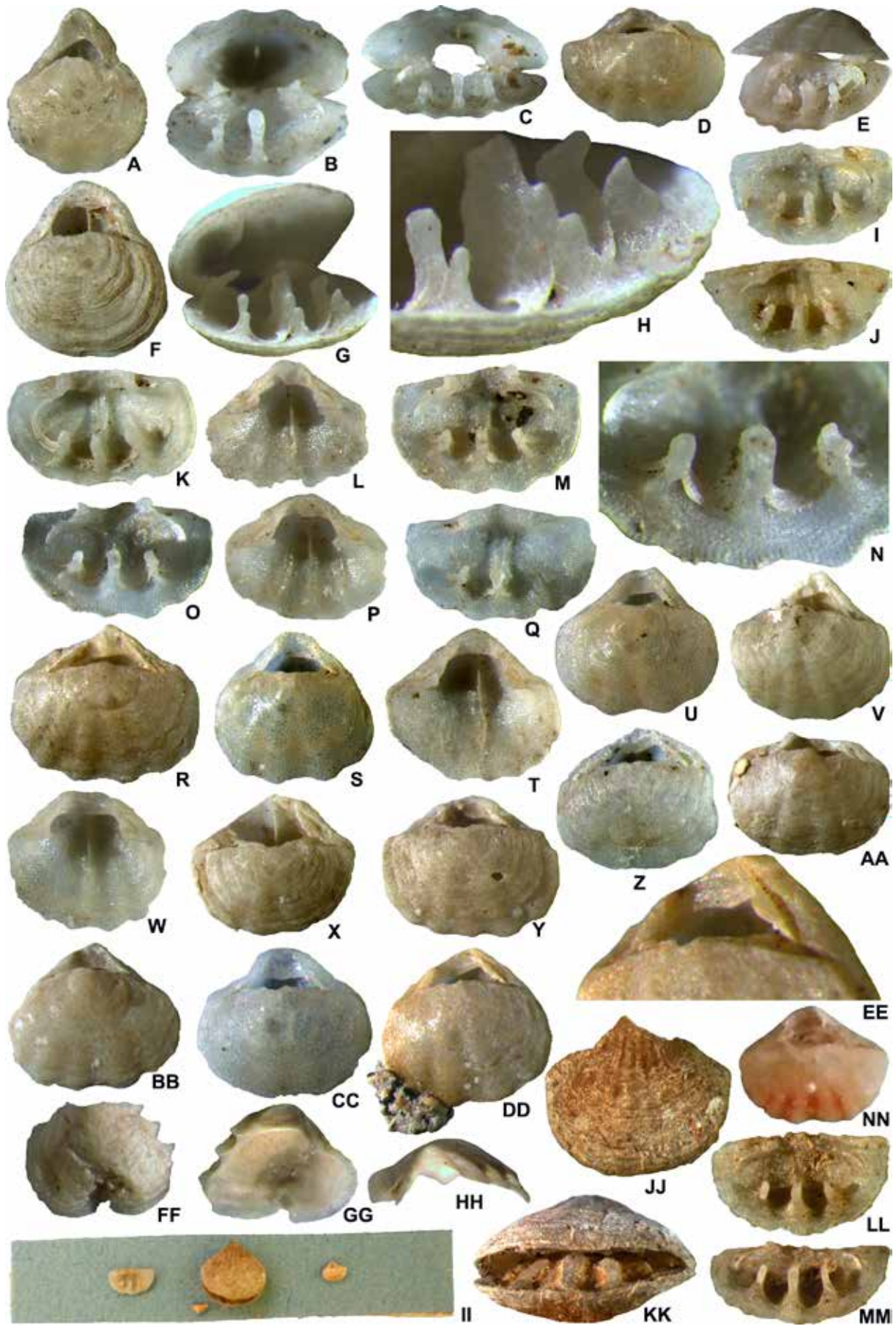
**A-EE**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00082; A-C, dorsal view (A, x9.6) of first articulated specimen, and anteroventral (B) and anterior (C) views (both x12) of the same specimen with the shell open and the ventral valve on top; D-E, dorsal view of the second articulated specimen (D, x8), and anteroventral (E) view (x7.8) of the same specimen open and the ventral valve on top; F-H, dorsal (F, x9.7) and anteroventral (G, x11.7) views of the third articulated specimen; H, detail of G (x29); I, J, K, M, O and Q, ventral views of the six disarticulated dorsal valves of this lot (x8, x10, x7.9, x10.5, x10.6 and x9.7 respectively); L, P, T and W dorsal views of the four dorsal valves of this lot (x9.3, x7.8, x10.7 and x8 respectively); R, S, U, V, X, Y, Z, AA, BB, CC, DD, dorsal views of the further 11 articulated specimens of this lot (x12, x11, x11, x8.3, x8.3, x11.4, x8.8, x8.3, x12.9, x14.7, and x13.6 respectively); N, detail of the dorsal septa in M (x22); EE, detail of DD (x27.2).

**FF-HH**, internal (FF), external (GG) and lateral (HH) views of a non-brachiopod shell (the three views x13.5).

**II-MM**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00083; II, two articulated specimens and a dorsal valve fixed to a light green card (x1.9); JJ-KK, ventral (JJ, x5) and anterior (KK, x6) views of the articulated specimen in the middle of the card (II); LL-MM, ventral (LL) and anteroventral (MM) views (both x8) of the dorsal valve fixed on the left side of the card.

**NN**, small articulated specimen (x12.3) fixed in the right side of the card and that has the distinctive red colouration between ribs characteristic of adult *Argyrotheca cuneata* (RISSO, 1826) and a dorsal interior with median septum high and wide anteriorly, without accessory septa (see Planche 35, A-G).





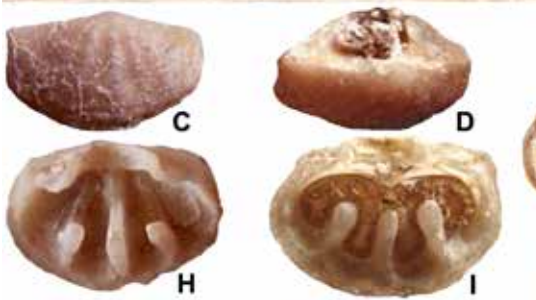
### Planche 34.

**A-I**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00022; A, photograph of the old label, x1; B, one articulated specimen, three dorsal valves and one ventral valve fixed to a card (x2.4); C-D, dorsal (C, x5.2), posterodorsal (D, x5.2) views of the articulated specimen; E, ventral view of the dorsal valve in the left side of the card (x5.5); F-G, dorsal (F, x5) and posterodorsal (G, x5) views of the ventral valve fixed in the middle of the card; H-I, ventral view of the two dorsal valves situated in the right side of the card (x5.5).

**J-U**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00027; J, photograph of the old label, x1; K-L, two disarticulated ventral valves and three disarticulated dorsal valves fixed to a card (x4 and x4.3 respectively); M-O, posterodorsal (M, x5.3), dorsal (N, x5) and posterior (O, x5) views of the ventral valve fixed in the upper left corner of the card; P-Q, ventral (P, x6) and posteroventral (Q, x7) views of the dorsal valve fixed in the middle of the first row of shells; R-S, dorsal (R, x6) and posterodorsal (S, x6.2) views of the ventral valve fixed in the upper right corner of the card; T, ventral view (x8.4) of the dorsal valve fixed in the left of the second row of shells; U, ventral view (x6.2) of the dorsal valve fixed in the right of the second row of shells.

**V-GG**, *Argyrotheca cuneata* (RISSO, 1826), ML-ZOO-MAL-00065; V, three small, articulated specimens and other three disarticulated fixed to a glass-slide on the left of which it is written '*Argiope decollata* Méditerr. La Calle Beyr.' (x2.6); W, detail of the specimens in V (x4.6); X, number written in the cork of the glass-tube (x1.5); Y-AA, internal (Y), almost lateral (Z) and external (AA) views of the specimen on the left corner in W (all x12); BB, internal view of the specimen on the middle part in W (x15), CC-DD, articulated specimen and the two valves of the disarticulated specimen fixed in the right corner in W viewed in the obverse (CC) and its opposite counterpart (DD) (both x11.7); EE, posterodorsal view of articulated specimen on the bottom right side in W (x17.8); FF-GG, dorsal (FF) and ventral (GG) (both x13.5) of the articulated specimen on the bottom left side in W.

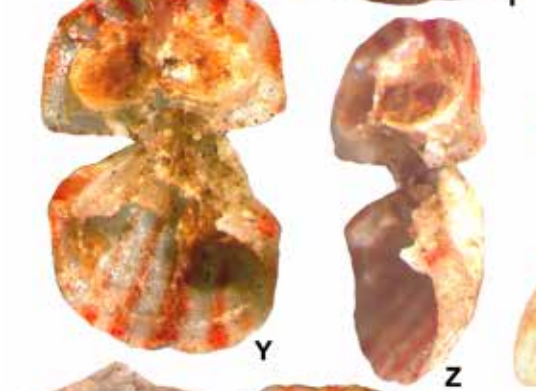
*Megathyris decollata* *cf. M. sp. 1/4*  
localité Alp. Blain 120 1/2



*Argiope decollata*  
localité Méditerranée Stage



*Argiope decollata*  
Méditerranée localité Beyr.



### Planche 35.

**A-G**, *Argyrotheca cuneata* (RISSO, 1826), ML-ZOO-MAL-00083; dorsal (A), posterodorsal (B), posterior (C), lateral (D, all x15), lateral, open (E, x15.5), anterolateral (and ventral valve on top, F, x15.5) and anterior with the shell open (G, x25) of the small articulated shell in the right side of the card in Planche 33II and NN.

**H-S**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-00061; H, a disarticulated ventral valve and a dorsal fixed to a glass slide with a light blue card underneath (x1.8); I, number written in the cork of the glass-tube (x1.5); J-P, ventral (J, x7.2), ventral slightly tilted anteriorly (K, x7.25), anteroventral (L, x19), posteroventral (M, x13.7), posterior (N, x13.7) and lateroventral (O, x29.4) views of the dorsal valve on the left side in H; P, detail of J (x29); Q-S, dorsal (Q, x9.5) and posterodorsal (S, x11) views of the ventral valve in H; R, detail of Q (x9.5).

**T-FF**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-00064 (see also Planche 36A-S); T, three articulated specimens, two disarticulated dorsal valves and two ventral fixed to a light blue card (x2.3); dorsal (U, x8), posterior (W, x8) and lateral (X, x8), views of the articulated specimen on the left side on T; V, detail, slightly tilted, of U (x12.2); Y-CC, ventral (Y, x8), lateroventral (Z, x10), posterior (AA, x15) and anteroventral (BB, x8) views of the dorsal valve of the previous specimen; CC, detail of Y (x20); DD-EE, dorsal (DD, x8) and posterodorsal (EE, x8.8) views of the ventral valve of the previous specimen; FF, anterodorsal view of the umbonal area of this valve (x12).



### **Planche 36.**

**A-S**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-00064 (see also Planche 35T-FF); A, dorsal view of the ventral valve fixed on the right of the articulated specimen on the left side of the card in Planche 35T (x7.4); B, detail of A (x22); C-E, ventral (C, x9), anteroventral (D, x11.6) and posterior (E, x12.3) views of the first disarticulated dorsal valve on Planche 35T; F-H, dorsal (F, x7.9) and posterodorsal (G, x7.9) views of the articulated specimen fixed on the middle of the card (Planche 35T), H, detail of G (x25); I-L, ventral (I, x7.9), anterior (J, x10.2) and lateral (K, x13.4) last two with the shell open (and the ventral valve on top), of the fifth specimen fixed to the card (Planche 35T), L, detail of J (x44); M-R, internal (M, x12), external (N, x12), posterior (P, x32), anteroventral (Q, x27) and lateroventral (R, x25) views of the dorsal valve fixed next to last specimen in Planche 35T; O, detail of the cardinalia (x30); S, exterior of the specimen fixed on the right side of the card (x9.4).

**T-Y**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-00030; T, photograph of the old label (x1.2); U, a dorsal valve and two ventral valves fixed to a card (x3.6); V, ventral view of the dorsal valve (x8); W, detail of V (x16); X-Y, dorsal view of each ventral valve (x5.3 and x5.8 respectively).

**Z**, photograph of one of the two identical card-boards with an old label with the name '*Cistella neapolitana* SCACCHI; Localité La Calle Algérie' written on it (x0.6).

**AA-EE**, photographs of five card boards from which the glass-tubes have been detached and having an old label with the name '*Megathyris decollata*' (*sic*) written on them (all x0.6).

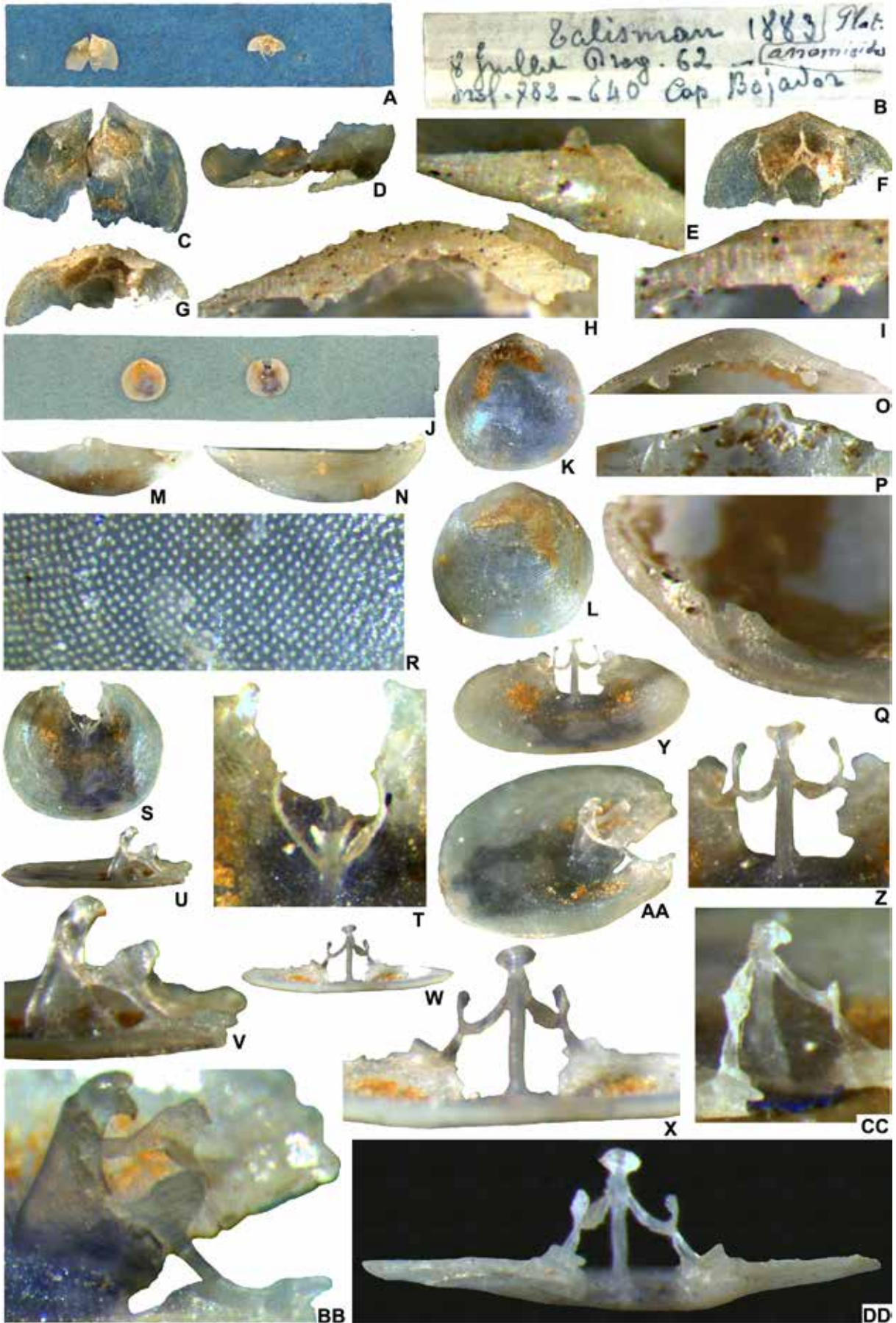


### Planche 37.

**A-I**, *Platidia anomioides* (SCACCHI and PHILIPPI, 1844), ML-ZOO-MAL-00009; A, two disarticulated ventral valves, broken and only partially preserved, fixed to a light blue card (x1.8); B, text written by hand in the reverse of the card (x2.2); C-E, dorsal (C) and posterior (D) views (both x6.6) of the ventral valve fixed on the left side of the card; E, detail of D (x33); F-I, dorsal (F, x8.7) and anterodorsal (G, x8.5) views of the ventral valve fixed on the right side of the card; H, detail slightly tilted, of G (x28); I, detail of H (x55) showing tooth.

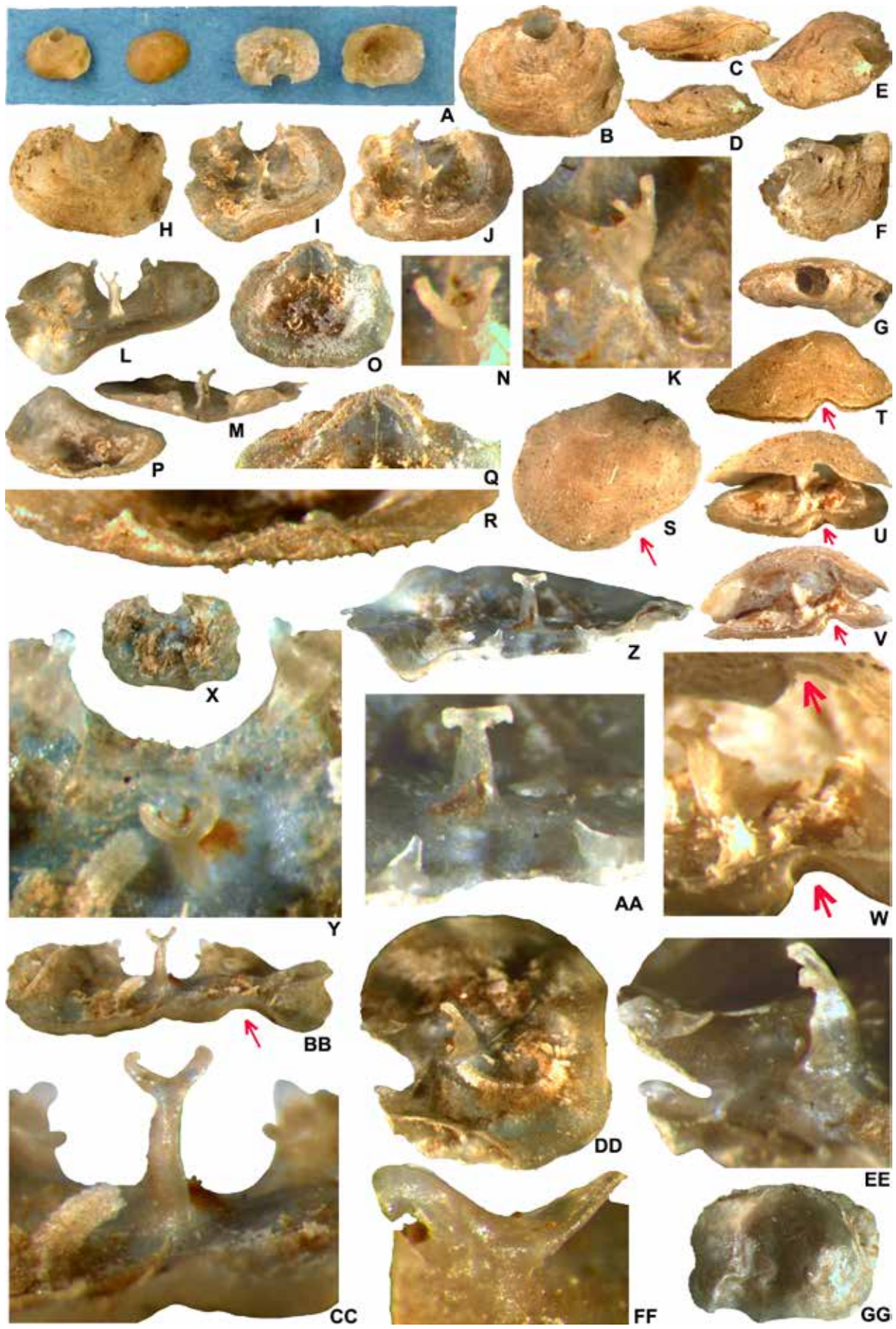
**J-DD**, *Platidia anomioides* (SCACCHI and PHILIPPI, 1844), ML-ZOO-MAL-00054; J, a ventral valve and a dorsal valve probably belonging to the same specimen, fixed to a light blue card (x1.6); K-R, interior (K, x5), exterior (L, x5.7), posterior (M, x6.8) and lateral (N, x7) views of the ventral valve fixed in the left side of the card (J); O-P, details, slightly tilted, of K (x18.7 and x22 respectively); Q, detail of left tooth viewed laterodorsally (x35); R, detail of L (x35); S-DD, ventral (S, 5.7), lateral (U, x8), anterior (W, 7.7), anteroventral (Y, 8.4), lateroventral (AA, x10) and posterior (DD, x18.8) views of the dorsal valve fixed in the right side of the card (J); T, detail of S (x12.5); V, detail of U (x22); X, detail of W (x18); Z, detail of Y (x20); BB-CC, details of the loop viewed lateroventrally (BB, x33) and posterolaterally (CC, 24.5).





### Planche 38.

**A-GG**, *Platidia davidsoni* (EUDES-DESLONGCHAMPS, 1855), ML-ZOO-MAL-00066; A, two articulated specimens, the first fixed by the ventral valve and the second by the dorsal valve, plus a dorsal valve and a ventral probably belonging to the same specimen, fixed all to a light blue card (x2); B-G, dorsal (B), anterior (C), lateral (D), laterodorsal (E-F) and posterior (G) views (all x4.8) of the articulated specimen on the left side of the card (A); H-N, dorsal (H, x4.8), anteroventral (I, x4.8), ventral (J, x4.8), anterior (L, x6.3) and posterior (M, x6.3) views of the dorsal valve of the previous specimen; K, lateroventrally view of median septum and short ascending branches (x19); N, ventral view of the ascending branches of the loop, short and diverging posteriorly from top of median septum (x30); O-R, dorsal (O, x4.8) and posterodorsal (P, x5) views of the ventral valve of the previous specimen; Q, detail of O (x10); R, detail of P (x18); S-W, ventral (S), anteroventral (with the shell closed, T, or partially open, U) and anterior (with the shell open and the ventral valve on top, V) views of the second articulated specimen (all x2.75), W, detail of V (x9.2); anterior commissure indented in S-W and BB (arrowed); X-FF, ventral (X, x3.2), posteroventral (Z, x8.4), anterior (BB, x7.7) and lateroventral (DD, x10.8) views of the disarticulated dorsal valve in the card (A); Y, detail of X (x18.3); AA, detail of Z (x18.2); CC, detail of BB (x21.6); EE, detail of DD (x22.2), FF, detail of EE (x58); GG, dorsal view of the ventral valve fixed on the right side of the card (x4.5).



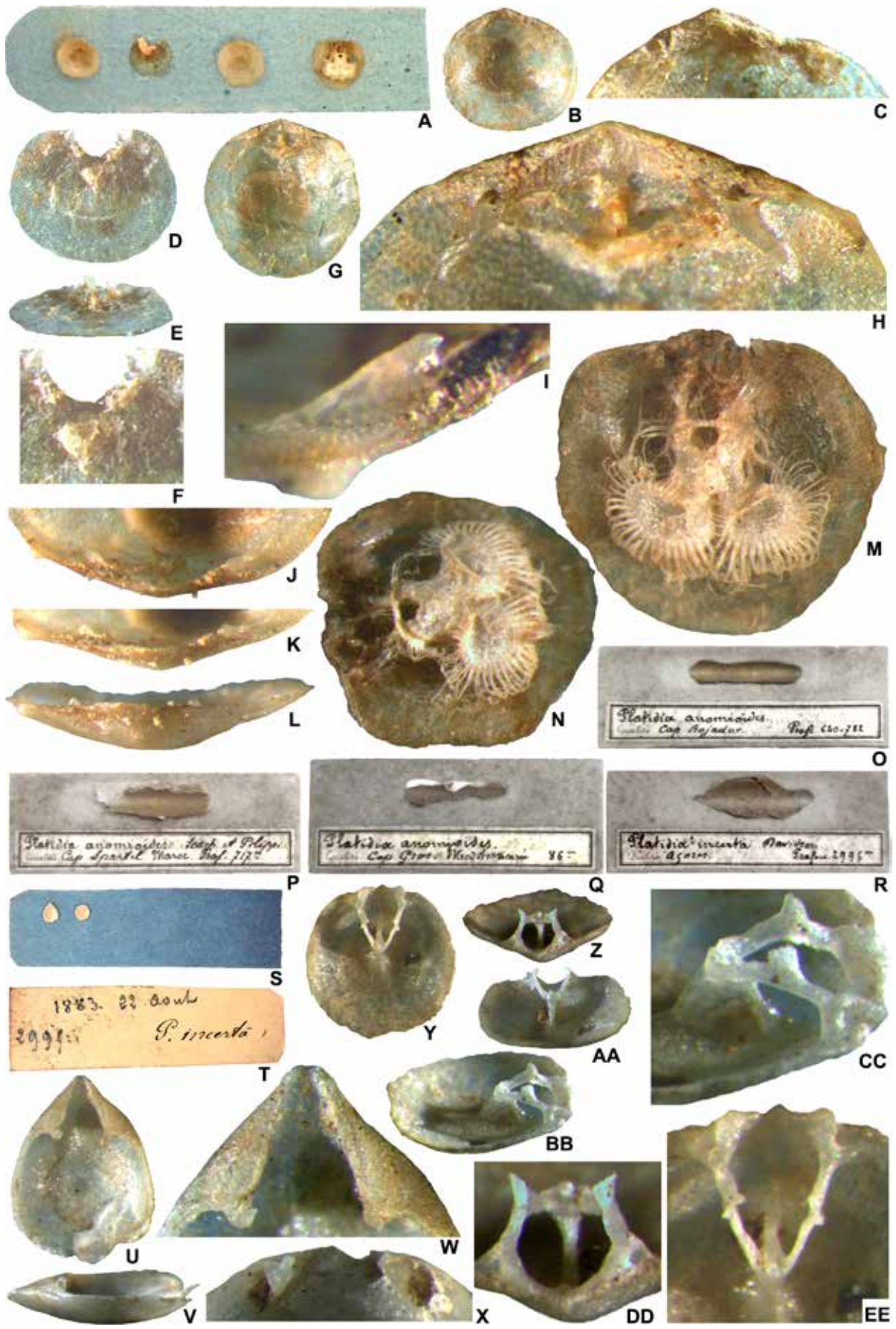
### Planche 39.

**A-N**, *Platidia anomioides* (SCACCHI and PHILIPPI, 1844), ML-ZOO-MAL-00058; A, two ventral valves and two dorsal, probably the counterparts of the preceding, fixed to a light blue card (x2.2); B, dorsal view of the ventral valve fixed on the left side of the card (x7.5); C, detail of B (x20); D-F, ventral (D, x8.8) and anterior (E, x8.5) views of the dorsal valve on the left side of the card; F, detail of D (x17); G-L, dorsal view (G, x6.8) of the ventral valve on the middle of the card; H, detail of G (x20); J-L, detail of G in posterodorsal (J-K, x10) and posterior (L, x9) views; I, enlargement of the tooth on the left side in G (x45); M-N, ventral (M, x16) and lateroventral (N, x14.5) views of the dorsal valve with lophophore dried but still preserved, on the right side of the card (A).

**O-Q**, photographs of the card-boards with an old label with the name '*Platidia anomioides*' written on it (x0.6) and 'Cap Bojador, prof. 640-782' (O), 'Cap Spartel Maroc Prof. 717m' (P) and 'Cap Gross Mediterranen 86 m' (Q) as respective localities and depths.

**R**, photograph of card-board with an old label with the name '*Platidia incerta* DAVIDSON' written on it (x0.6) and 'Azores, 2995m' as locality and depth.

**S-EE**, *Leptothyrella incerta* (DAVIDSON, 1878), ML-ZOO-MAL-00023; S, a ventral valve and a dorsal probably belonging to the same specimen, fixed to a blue card (x1); T, text written by hand in the reverse of the card (x1); U-X, dorsal (U) and lateral (V) views (both x13) of the ventral valve fixed on the left side of the card; W, detail of U (x35); X, anterodorsal view of W (x32); Y-EE, ventral (Y, x13), posteroventral (X, x13), anteroventral (AA, x13) and ventrolateral (BB, x15) views of the dorsal valve; CC, detail of BB (x30); DD, detail of Z (x35); EE, detail of Y (x32).



#### **Planche 40.**

**A-J**, *Terebratella sanguinea* (LEACH, 1814), ML-ZOO-MAL-00037; A, photograph of the old label, x1; B, photograph of the text written by hand (x1.8) in the reverse of the card-board to which the two valves of a disarticulated specimen are fixed; C, ventral view of the dorsal valve (x1.4), D-E, ventral (D, x3.6) and ventrolateral view (E, x3) of the cardinalia and remains of the loop; F-J, dorsal (F, x1.4), laterodorsal (H, x1), anterodorsal (I, x1.5) and external (J, x1.4) views of the ventral valve; G, detail of the posterior sector of the ventral valve (x4.7).

**K-O**, *Terebratella sanguinea* (LEACH, 1814), ML-ZOO-MAL-00040; K, photograph of the old label, x1; L-N, eroded and partially broken dorsal valve in ventral (L, x1.7) and dorsal (N, x1.8) views and detail of the external ornamentation (O, x10) and septalio (M, x3.6).

**P-R**, *Neothyris lenticularis* (Deshayes, 1839), ML-ZOO-MAL-00040; eroded and partially broken ventral valve in external (Q, x0.8) and internal (P, x0.8; R, x1.6) views.

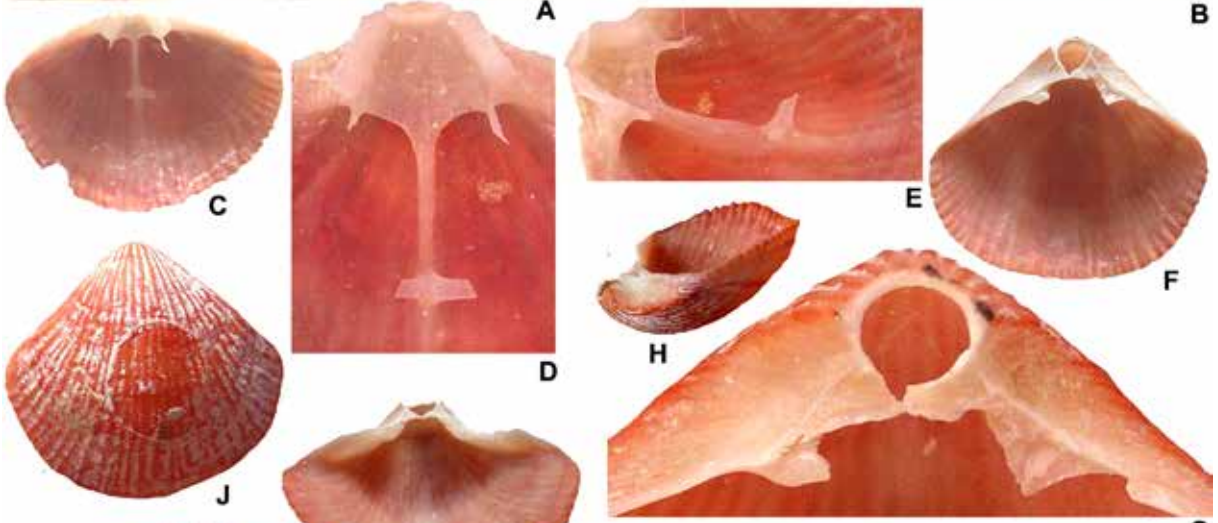
**S-V**, photographs of four card-boards with an old label with the name '*Terebratella cruenta* Dilwyn' and 'Iles Stewart' as locality, but without any label with registered number fixed in the reverse of them, and from which the glass-tubes, may be those of the lots illustrated above, have been detached (x0.6).

**W-X**, photographs of two card-boards with an old label with the name '*Terebratella dorsata* Gemelin sp.' and 'Cap Horn Baie Elise; Prof 33', or only 'Cap Horn.' as localities but without any label with registered number fixed in the reverse of them, and from which the glass-tubes have been detached (x0.6).

**Y**, photograph of a card-board with an old label with the name '*Terebratella*' an 'Iles Stewart' as locality. No label with registered number was fixed in the reverse of this card board, and from which a glass-tube have been detached (x0.6).

*Berebratella crenata*. Nilvyn.  
Localité Point. d. Soreaux Nouvelle Zélande.

*Berebratella crenata*



*Berebratella*  
Localité The Stewart. Grage



*Berebratella crenata*. Nilvyn.  
Localité The Stewart.

*Berebratella crenata*. Nilvyn.  
Localité The Stewart.

*Berebratella crenata*. Nilvyn.  
Localité The Stewart.

*Berebratella crenata*.  
Localité The Stewart.

*Berebratella dorsata*. Gmelin. sp.  
Localité Cap Horn. Nax. Alta. Mus. 33.

*Berebratella dorsata*. Gmelin. sp.  
Localité Cap Horn.

*Berebratella*  
Localité The Stewart.

## Planche 41.

**A-N**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00036; A, two articulated specimens loose on top of a card board with an old label with the name '*Terebratella rubicunda* Soland' written on it and 'Détroit de Foveaux, Nouvelle-Zélande' as 'Localité' (x0.4); B, photograph of the old label (x1); C-H, dorsal (C), ventral (D), posterior (E), anterior (F) and lateral (G) views of the specimen on the left side of A (all x1.1), H, detail of C (x2.7); I-N, dorsal (I), ventral (J) and lateral (K) views of the specimen on the right side of A (all x1.1), L, ventrolateral view of previous specimen showing ornamentation (x1.4); M, anterior view of same specimen with the anterior commissure open (x1.6); N, detail of M (x4.7).

**O-S**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00084; O, a dorsal valve and a ventral loose on top of a card (x0.9); P-S, internal (P) and external (Q, both x2.3) views of the ventral valve; R-S, ventral view (R, x2.3) and detail (S, x8.5) of the dorsal valve.

**T-AA**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00095; T, two articulated specimens, one loose and the other fixed to the left side of a light blue card (x0.6); U-V, dorsal view of the fixed specimen (U, x2.1) and detail of U (V, x4); W-AA, dorsal (W), ventral (X), lateral (Y), anterior (Z) and posterior (AA) views of the specimen on the right of T (all x2.3).

**BB-KK**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00114; BB, two articulated specimens, two dorsal valves and two ventral loose, on top of a light blue card (x0.7); CC-FF, dorsal (CC), ventral (DD), lateral (EE) and anterior (FF) views (all x1.4) of the specimen on the left side of BB; GG-KK, dorsal (GG), ventral (HH), lateral (II), posterior (JJ) and anterior (KK) views (all x1.6) of the second specimen.

**LL-UU**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00117; LL, two loose articulated specimens and another fixed to the left side of a light blue card (x0.9); MM, ventral exterior of the fixed specimen (x1); NN-SS, dorsal (NN), ventral (OO), anterior [with the shell closed (PP, x1), open (QQ) and open and slightly tilted posteroventrally (RR, both x1.5)] views of the specimen in the middle of the card (in the three anterior views, PP-RR, the ventral valve is on top); TT-UU, dorsal (TT) and ventral (UU, both x1) views of the articulated specimen on the right side in LL.



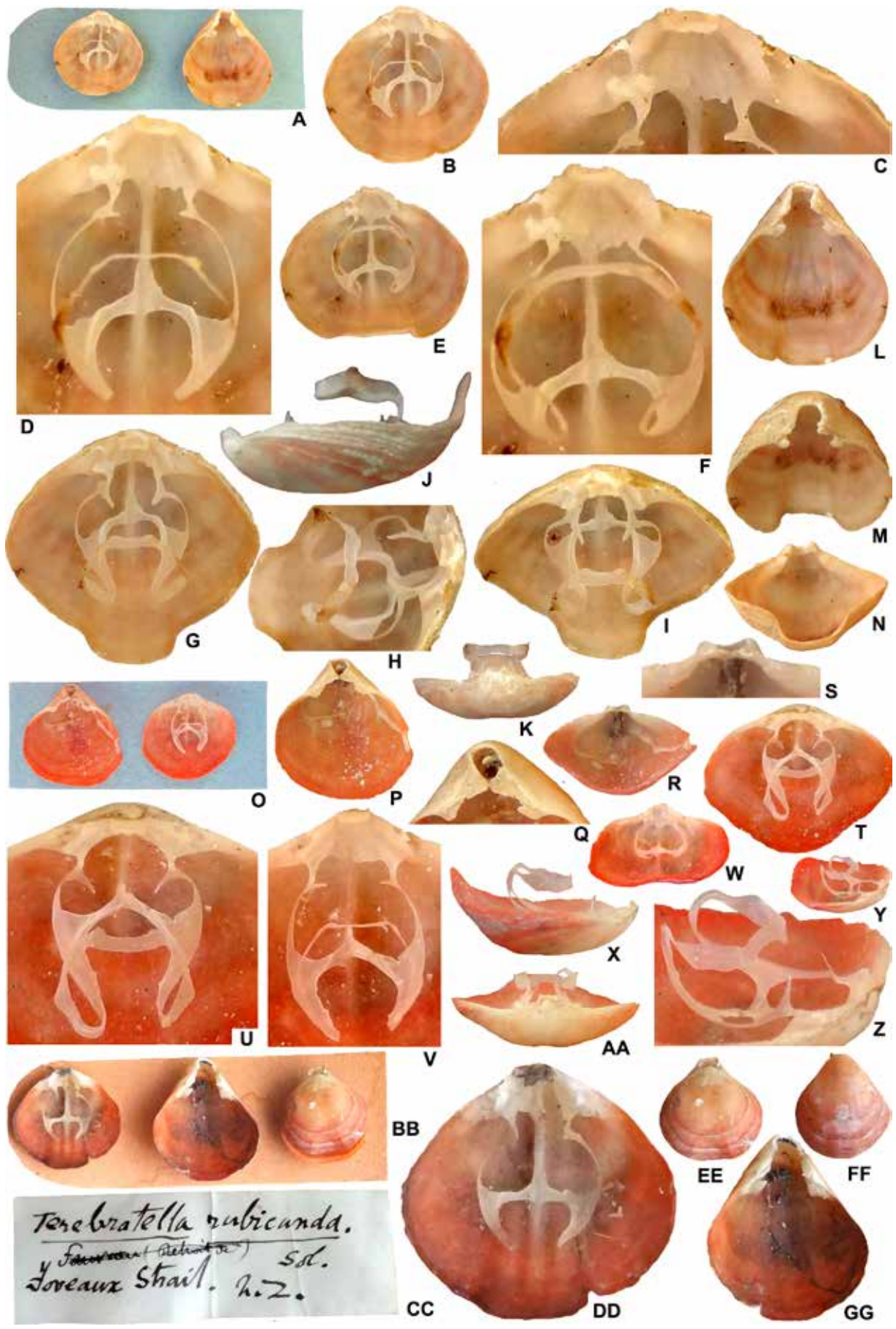


## Planche 42.

**A-N**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00119; A, a dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (x0.8); B-K, ventral (B, x1.6), ventral slightly tilted anteroventrally (E, x1.6), ventral slightly tilted posteroventrally (G, I, both x2.5), lateral (J, x2.5), lateroventral (H, x3.3) and posterior (K, x1.6) views of the dorsal valve; F, detail of E (x4); L-N, dorsal (L), posterodorsal (M) and anterodorsal (N, all x1.6) views of the ventral valve.

**O-AA**, *Calloria inconspicua* (SOWERBY, 1846), ML-ZOO-MAL-00136; O, a dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (x1); P-S, dorsal (P, x1.5) and anterodorsal (R, x1.7) views of the ventral valve; Q, detail of P (x2.5); S, detail of R (x4.25); T-AA, ventral (T, x2), anteroventral (W, x1.5), lateral (X, x2.2), lateroventral (Y, x1.2) and posterior (AA, x2) views of the dorsal valve; U, detail of T (x4.2); V, detail of O (x3.8); Z, detail of Y (x4.1).

**BB-GG**, *Calloria inconspicua* (SOWERBY, 1846), ML-MAL-01296; BB, a dorsal valve fixed to a light brown card with a loose ventral valve, probably the counterpart of the preceding, and an articulated specimen (x1); CC, photograph of the text written by hand in a piece of paper (x1); DD, ventral view of the disarticulated dorsal valve (x3); GG, dorsal view of the ventral valve (x1.6); EE-FF dorsal (EE) and ventral (FF) views of the articulated specimen (both x1.2).



**Planche 43.**

**A-L**, *Anakinetica cumingii* (DAVIDSON, 1852), ML-MAL-01286; A, loose articulated specimen on a light brown card (x0.7); B, photograph of the text written by hand in a piece of paper (x0.7); C-L, dorsal (C), ventral (D), lateral (E), posterior (F), anterior (G), posteroventral (H) and laterodorsal (I) views (all x3) of the specimen; J-L, details of C, H and G respectively (J and L x4.7; K, x4.8).

**M-II**, *Magellania flavescens* (LAMARCK, 1819), ML- MAL-01297; M, a disarticulated dorsal valve and a ventral loose in a round box (x0.6); N, photograph of the label folded inside the box (x0.8); O-S, dorsal (O, x1), anterior (P, x1), posterior (Q, 1.2) and lateral (T, x1) views of the two valves once 'articulated'; R, detail of Q (x5.8); S, detail of O (x2.4); V-Z, dorsal (V, x1), ventral (W, x0.9), posterodorsal (U, x1) and anterior (X, x2) views of the ventral valve; Y, detail of V (x1.4); Z similar to Y but slightly tilted posterodorsally (x1.7); AA-GG, dorsal (AA, x1), ventral (BB, x1.2), ventral slightly tilted anteroventrally (CC, x1.1), ventral tilted posteroventrally (DD, x1.9), ventral slightly tilted posteroventrally (EE, x1) and lateroventral (FF, x1.2) views of the dorsal valve; GG, detail of FF (x4.8); HH, detail of EE (x3.8); II, detail of BB (x5.5).



#### **Planche 44.**

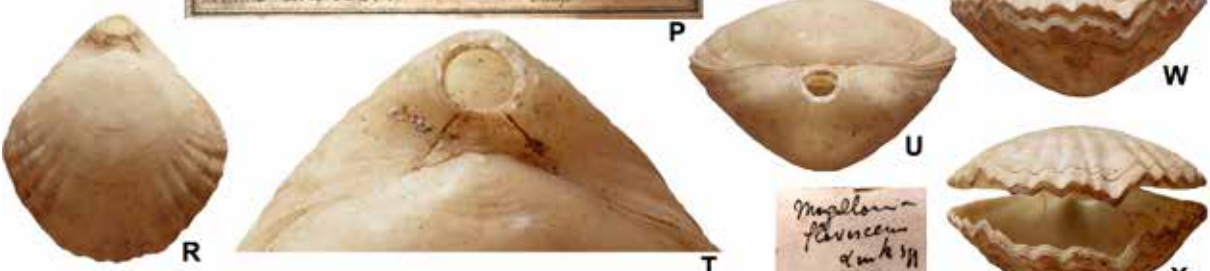
**A-O**, *Magellania flavescens* (LAMARCK, 1819), ML-ZOO-MAL-00034; A, photograph of the old label, x1; B, three articulated specimens fixed to a card-board (B, x0.9); C-H, dorsal (C, x1.6), enlargement of the umbonal area (D, x3), posterior (E, x2.2), posterolateral (F, x2.6), anterior (G, x1.5) and lateral (H, x3.3) views of the specimen fixed in the left side of the card-board; I-L, ventral (I, x1.5), ventrolateral (J, x2.3) and anterior views, with the shell almost closed (K, x2.5) and partially open (L, x2.5) (ventral valve on top) of the specimen fixed in the middle of the card-board; M-O, dorsal (M, x1.5), enlargement of the umbonal area (N, x3) and anterior (O, x3) views of the specimen fixed in the right side of the card-board.

**P-Y**, *Magellania flavescens* (LAMARCK, 1819), ML-ZOO-MAL-00035; P, photograph of the old label, x0.8; Q, text written by hand in a small card inside the glass tube (x0.7); dorsal (R, x1), posterior (U, x1.3), lateral (V, x2.3), anterior [with the shell closed (W, x1.3) or partially open (X, x1.3)] views of the articulated specimen (fixed by its ventral valve) of this lot; S, detail of the external ornamentation of the anterolateral sector of the dorsal valve (x3.2); T, enlargement of the umbonal area (x2.5); Y, detail of the costate external ornamentation with closely spaced growth lamellae near the anterolateral commissure (x4).

*Magellania flavescens*. Lamour.  
Localité: Côte d'Anchalis. Stage



*Magellania flavescens* Lamour.  
Localité: Côte d'Anchalis. Stage



*Magellania flavescens*  
Lamour  
Côte d'Anchalis

#### **Planche 45.**

**A-H**, *Magellania flavescens* (LAMARCK, 1819), ML-ZOO-MAL-00126; A, a dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (x0.8); B-E, detail of the dorsal valve viewed ventrally (B, x3.6), posteroventrally (C, x3.8), anteroventrally (D, x2.3) and lateroventrally (E, x4); F-H, detail of the ventral valve viewed posterodorsally (F, x3), anterodorsally (G, x1) and laterodorsally (H, x2.5).

**I-Q**, *Magellania venosa* (SOLANDER, 1789), ML-ZOO-MAL-00131; I, two articulated specimens fixed to a light blue card (x1.2); J, photograph of the card-board (x0.5). K-N, ventral (K, x2.1), anterior (with the ventral valve on top, L, x1.4), lateral (M, x1.7) and posterior (N, x1.9) views of the specimen on the left side of the card; O-Q, dorsal (O, x2.7), anterior (P, x2) and posterior (Q, x2.4) views of the smaller specimen.

**R-AA**, *Magellania venosa* (SOLANDER, 1789), ML-ZOO-MAL-00044; R, photograph of the old label, x0.7 (This specimen is not a *T. septentrionalis* as it is written in the label but a *Magellania venosa* see text and Planche 15H-K); S, photograph of the text written by hand in the reverse of the card (x0.5); ventral valve in ventral (T) and dorsal views (U, both x1.5); detail of the posterior sector of the ventral valve interior (V, x3.9); interior of ventral valve in anterolateral view (W, x1.1) and detail of the muscle impressions (X, x12.7); Y-AA, interior of dorsal valve in ventral (Y, x1.5) and anteroventral (Z, x2) views, and detail of the posterior sector of dorsal valve interior (AA, x10).





**Planche 46.**

**A-H**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00003; A, photograph of the old label, x1; B, five pieces of disarticulated valves, three dorsal and two ventral, fixed to a card (B, x1.75); C, photograph of the text written by hand in the reverse of the card (x2); D-E, ventral views of the two broken dorsal valves fixed in the right upper corner of the card showing cardinalia and dorsal ends of diductor and pedicle muscles (x4 and x5.3 respectively), F-G, detail of the posterior sector of the longer ventral valve showing pedicle foramen, symphytium and pedicle muscles (x3.5 and x5 respectively), H, dorsal view of the broken ventral valve fixed to the lower right corner of the card showing pedicle and adductor and diductor muscles (x3.4).

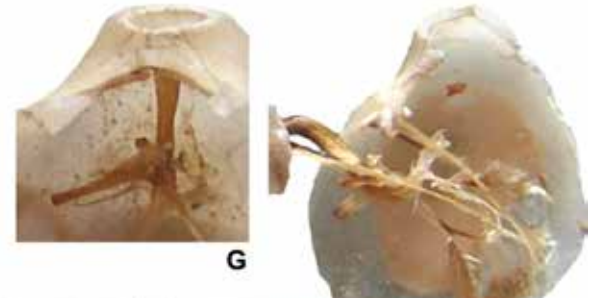
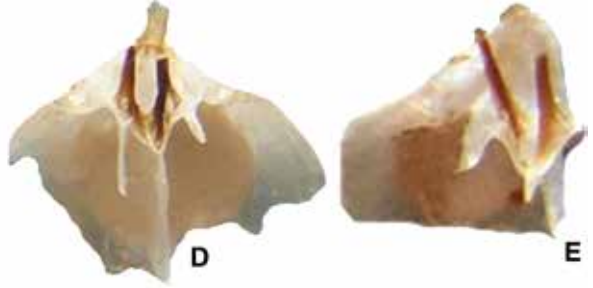
**I-R**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00004; I, photograph of the old label, x1; J, a disarticulated specimen fixed to a card (x1.5); K, photograph of the text written by hand in the reverse of the card (x1); L, detail of the posterior sector of the ventral valve showing pedicle foramen, symphytium and teeth (x3.5), M-N, laterodorsal and anterior views of the ventral valve (x1.5), O-R, dorsal interior with the mantle canal system highlighted with black ink, O, detail of cardinalia (x4.5), P-R, lateroventral, anterior and anteroventral, slightly lateral views of the dorsal valve (x3.8, x2.8 and x3 respectively).

*Dallina septigera*. Lovén sp.  
Cap. Bogador. Prof. 640.782.

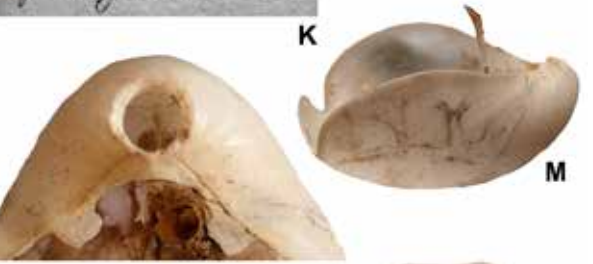


*Septigera* -  
Cap. Bogador

*Dallina septigera*. Lovén.  
Cap. Bogador. Olaga



*D. septigera*  
- Oc. atlantique  
Cap. Bogador.

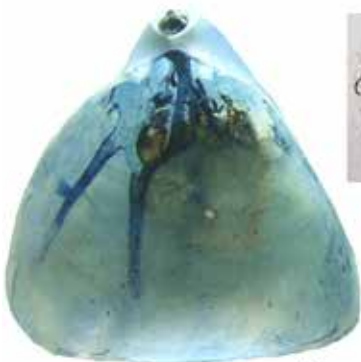


**Planche 47.**

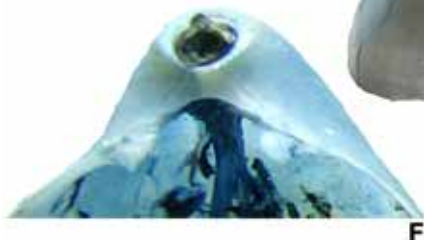
**A-G**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00005; A, photograph of the old label, x1; B, photograph of the text written by hand in the reverse of the card (x1.8); C, a disarticulated specimen fixed to a card (x1.4), both valves are dyed with pale blue ink; dorsal (D, x2) and laterodorsal (E, x2) views of the ventral valve, detail of the posterior sector of the ventral valve showing pedicle foramen, pedicle remains, symphytium and teeth (F, x4), lateroventral view of the cardialia and loop (G, x3.3).

**H-R**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00007; H, photograph of the old label, x1; I, a disarticulated specimen fixed to a card (x1.25), J-L, detail of the posterior sector of the ventral valve showing pedicle foramen, symphytium and teeth in dorsal (J, x4.7), posterodorsal (K, x3.5) and anterodorsal (L, x8.5) views; M-O, interior of dorsal valve in ventral (M, x2.6), ventrolateral (N, x1.5) and lateral (O, x2.8) views; P-R, cardinalio in ventrolateral (P, x4.2), ventral (Q, x5) and posterolateral (R, x6.5) views.

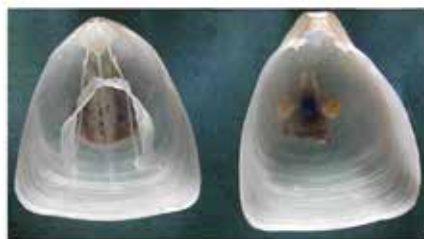
*Dallina septigera*. Lovén sp.  
Localité Cap. Bojador. Prof. 640-782



*D. septigera*  
Cap. Bojador.  
640-782



*Dallina septigera*. Lovén sp.  
Localité Cap. Bojador. Prof. 640-782



**Planche 48.**

**A-H**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00072; A, a dorsal valve fixed to a card and a ventral loose inside the tube (x1); B-E, H, dorsal (B, x1.4), ventral (C, x1.3), anterodorsal (D, x1.5), lateral (E, x1.2) and anterior (H, x1.5) views of the ventral valve; F-G, ventral (F, x1.3) and anterior, slightly rotated laterally (G, x1.5) views of the dorsal valve.

**I-R**, *Dallina septigera* (LOVÉN, 1845), ML-MAL-01281; I, two articulated specimens fixed, one by his dorsal valve and the other by the ventral, to a light brown card (x1.3); J, dorsal view of the specimen on the right side in I (x2); K, ventral view of the specimen on the left side in I (x1.9); L-M, anterior (L) and posterior (M) views of the two specimens fixed to the card (both x1.4); N, anterior view of the specimen on the left side in I, ventral valve on top (x2.5), P, anterior view of the specimen on the right side in I, dorsal valve on top (x2.2), O, detail of N (x4), Q, lateral view of the specimen on the right side in I, (x1.3); R, photograph of the text written by hand in piece of paper inside the glass-tube (x1.5).

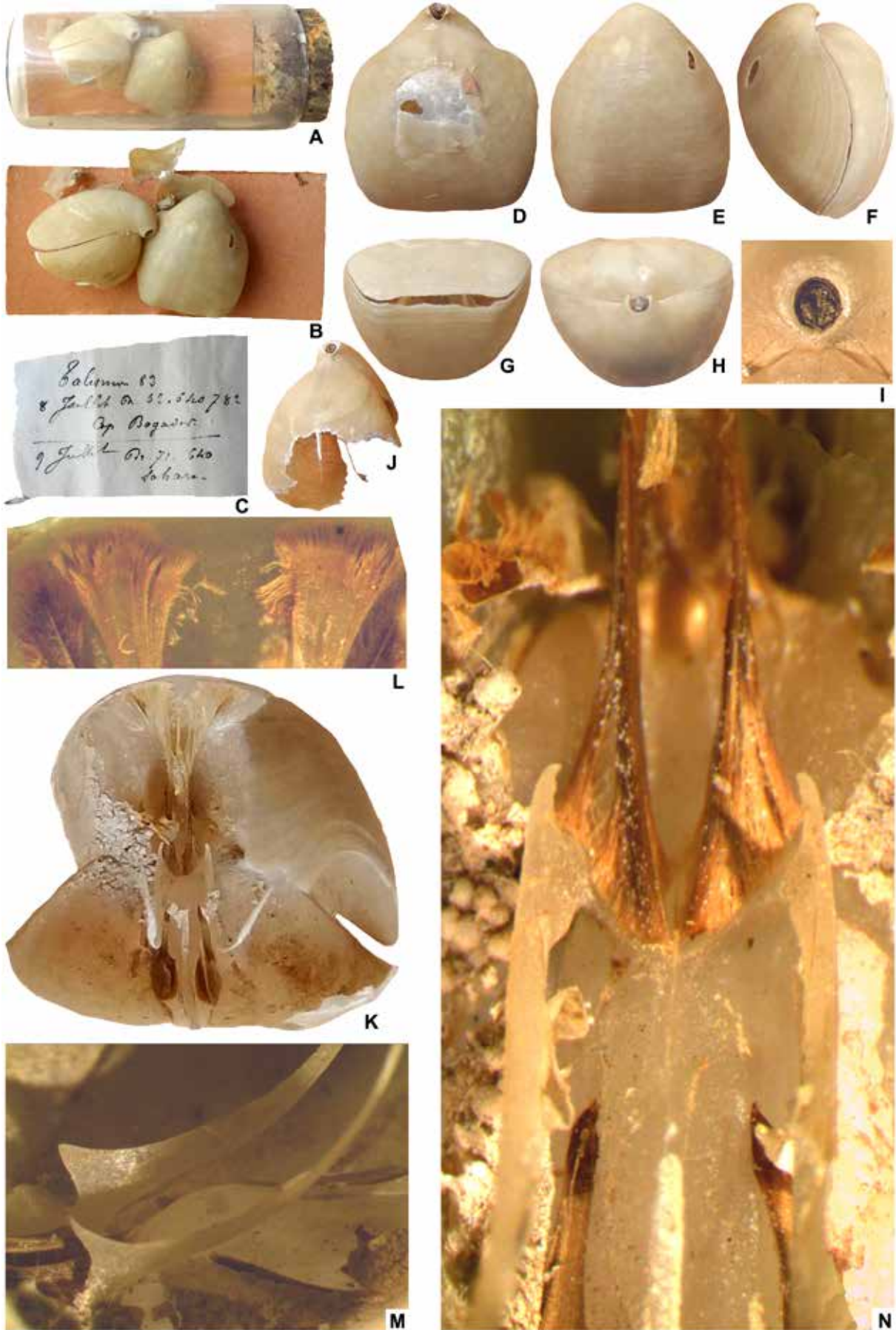
**S-AA**, *Dallina septigera* (LOVÉN, 1845), ML-MAL-01295; S, articulated specimen fixed by his ventral valve, to a light brown card (x1); T-Z, dorsal (T), anterior (close, U; slightly open, V), lateral (X and Y) and posterior (Z) views of the specimen (all, x2); W, detail of V (x6.7); AA, photograph of the text written by hand in piece of paper inside the glass-tube (x1).



**Planche 49.**

**A-N**, *Dallina septigera* (LOVÉN, 1845), ML-MAL-01277; A-B, Two articulated specimens, one anteriorly broken, loose together with a light brown card inside a glass-tube (A, x0.8, B, x1); C, photograph of the text written by hand in piece of paper inside the glass-tube (x0.8); D-I, dorsal (D), ventral (E), lateral (F), anterior (G) and posterior (H) views of the complete, articulated, specimen (all x1.8); I, detail of the ventral umbonal area viewed posteroventrally (x4.7); J-N, dorsal, slightly tilted laterally (J, x1.5) and anterior (K, x3.8; ventral valve on top) views of the anteriorly broken specimen, L, detail of the muscle insertions in the ventral valve interior (x25); M, ventrolateral view showing crura, crural processes and median septum (x7); N, detail of cardinalia and muscle attachment (x20; ventral valve on top).

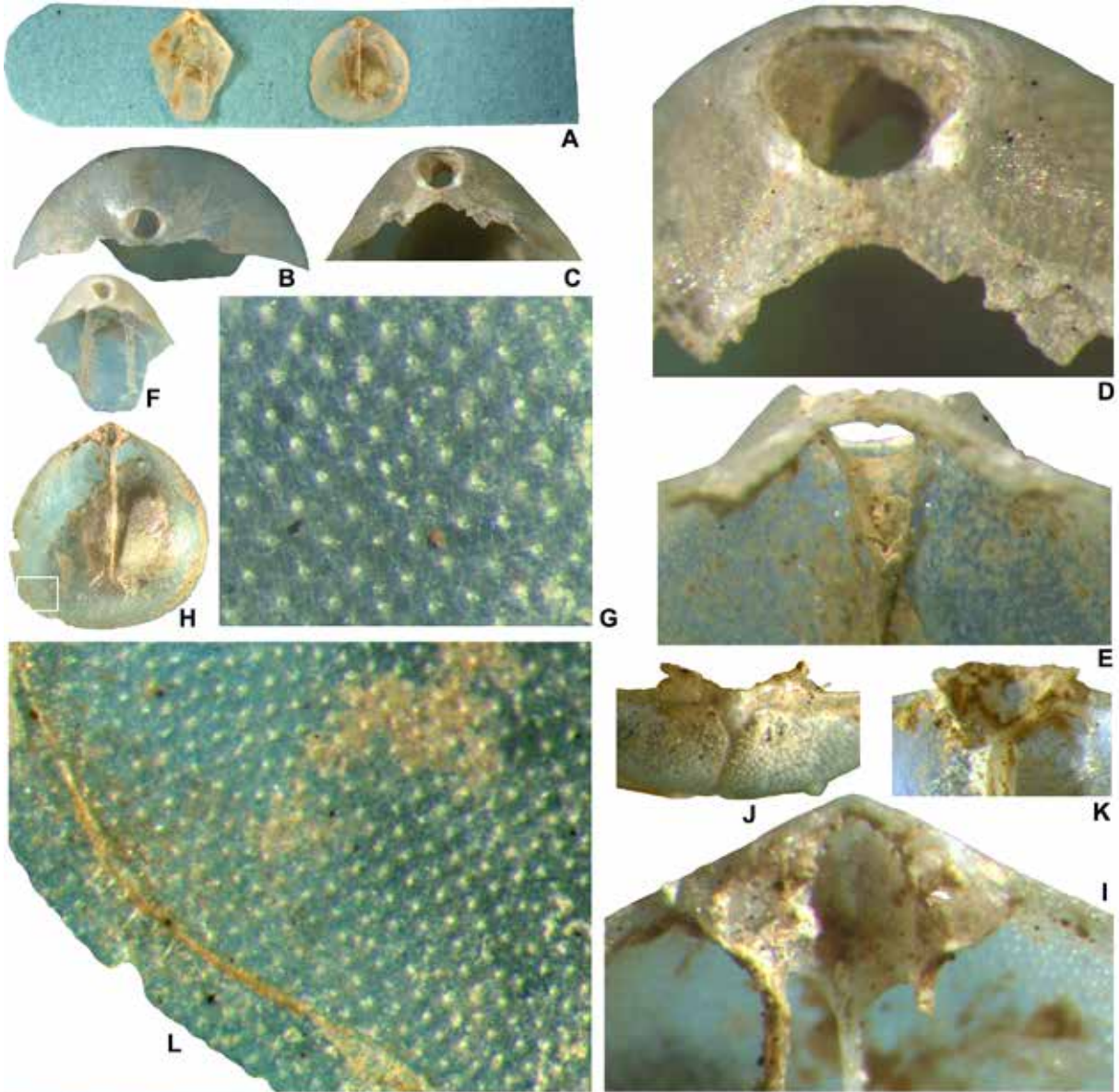




## Planche 50.

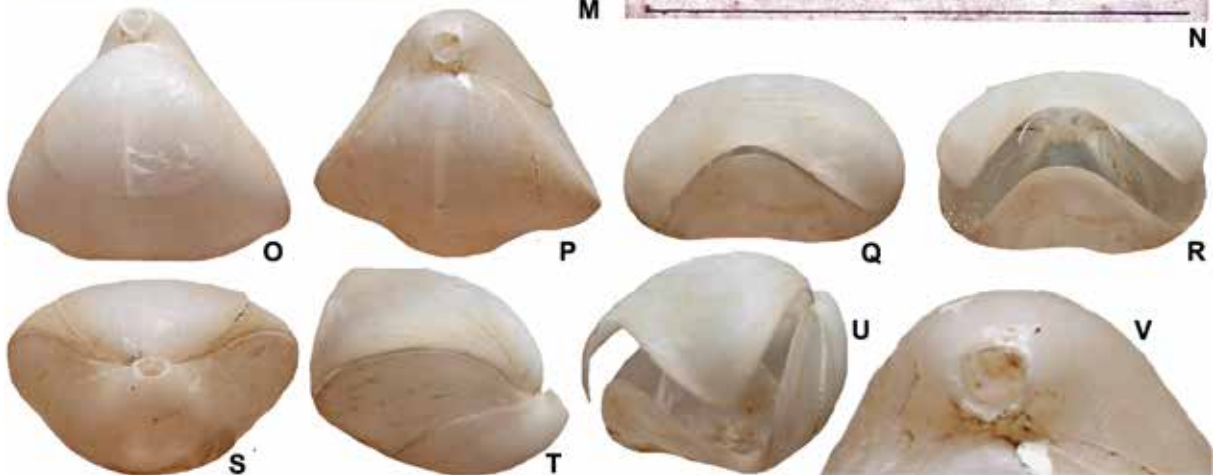
**A-L**, *Dallina septigera* (LOVÉN, 1845), ML-ZOO-MAL-00068; A, a disarticulated and broken ventral valve and a dorsal, probably belonging to the same specimen, fixed to a light blue card (x1.8); B-G, posterior (B, x6.7) and posterodorsal (C, x9.2) views of the ventral valve; D, detail of C (x36.7); E, anteroventral view of the ventral umbonal area (x30); F, posterodorsal view of ventral valve (x4.3); G, enlargement of middle area of ventral interior showing secondary-layer fibre mosaic and endopunctae (x65); H-L, ventral view of dorsal valve (H, x3.7); I, detail of H (x30); J-K, cardinalio viewed posteriorly (J) and anteroventrally (K, both x14); L, detail of the dorsal valve interior near the anterolateral region marked by a rectangle in H (x50).

**M-V**, *Dallina floridana* (POURTALÈS, 1867), ML-ZOO-MAL-00048; M, photograph of the old label, x0.8; N, photograph of the label fixed in the reverse of the card-board (x1.2); articulated specimen in dorsal (O), posterodorsal (P), anterior [with the shell closed (Q) or partly open (R)], posterior (S), lateral (T) and anterolateral (partially open, U) views (all x1.7) and detail of the umbonal area (V, x4.5).



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*Waldheimia floridensis* Pourtales  
 1871

*Waldheimia floridensis*. Pourtales.  
 United States deep sea dredging expedition off  
 the Coast of Mexico, 1869.



**Planche 51.**

**A-O**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00089 (see also Planche 52, A-S); A, four disarticulated specimens fixed to a card (x2); B-C, dorsal view of the ventral valve in the left side of the first row (B, x4); C, detail of B (x10.3), D-G, ventral (D, x4.5), posteroventral (E, x6.5) and anteroventral (G, x11) views of the dorsal valve on the right of the previous ventral valve, F, detail of D (x20.5); H-I, dorsal view (H, x3.6) of the second ventral valve on the first row, I, detail of H (x12), J, detail of I with the valve slightly tilted anterodorsally (x15); K, ventral view of the dorsal valve on the right corner of the first row (x3.8), L-O, details of the cardinalia (L, x16.5) and the loop of K, viewed ventrally (M, x24), slightly tilted lateroventrally (N, x27) and anteriorly (O, x20).



## **Planche 52.**

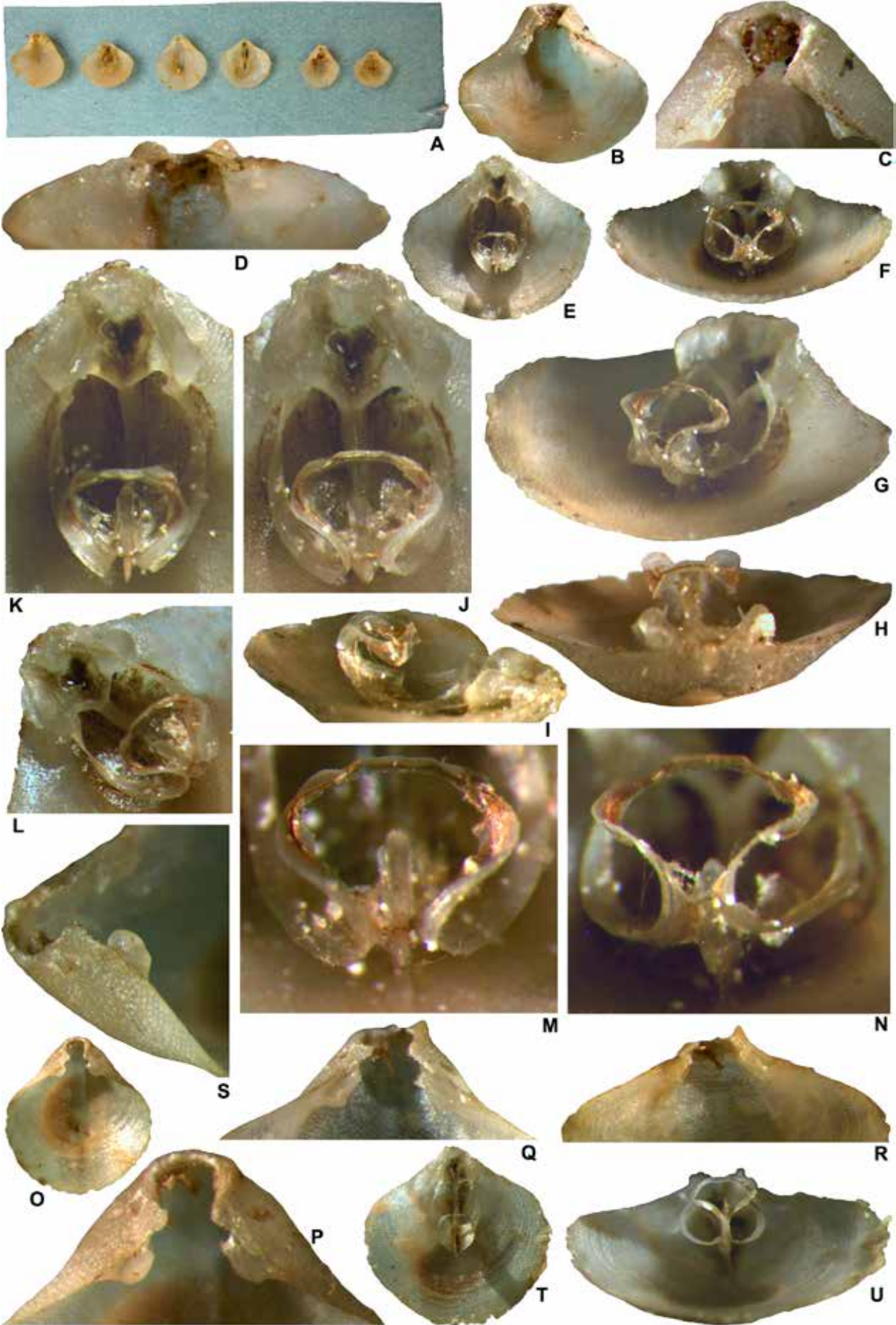
**A-S**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00089 (see also Planche 51A-O); A-C, detail of the cardinalia and loop of the dorsal valve on the right top corner in Planche 51A, viewed lateroventrally (A, x14.3), laterally (B, x11) and slightly tilted anteroventrally (C, x20.3); D-F, dorsal (D) and ventral (F, both x4.6) views of the ventral valve on the bottom left corner in Planche 51A; E, detail of D (x7.4); G-J, ventral (G) and anterior (H, both x5.3) views of the dorsal valve on the right of the previous ventral valve, I, detail of H (x17), J, detail of G (x20.6); K-L, dorsal view of the second ventral valve in the lower row (K, x6.6); L, detail of K tilted anterodorsally (x14); M-S, dorsal (M, x6.6), lateroventral (O, x9.8; P, x19), anterior (Q, x17) and posteroventral (R, x10.4) views of the dorsal valve on the right bottom corner in Planche 51A; N, detail of M (x18.5); S, detail of M (x17.3).



### **Planche 53.**

**A-U**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00090 (see also Planche 54A-S); A, three disarticulated specimens fixed to a card (x1.7); B-D, dorsal view of the ventral valve in the left side of the card (B, x6); C, detail of B (x15); D, detail of ventral interior viewed anteriorly (x7.8); E-N, ventral (E, x6.3), anteroventral (F, x10), lateroventral (G, x15.4), posterior (H, x13.5) and lateral (I, x13) views of the dorsal valve on the right of the previous ventral valve, K, detail of E (x16.6), J, detail of E slightly tilted anteroventrally (x19.2), L, detail of E slightly tilted lateroventrally (x14), M-N, details of loop viewed anteriorly (M, x31.3) and anterolaterally (N, x29.2); O, dorsal view of the ventral valve in the middle of the card (x4.9), P, detail of O (x12.3), Q-R, details of P slightly tilted anterodorsally (Q, x9.3; R, x8.2); T-U, ventral and anteroventral view of the dorsal valve in the middle of the card (T, x6; U, x10.8).





**Planche 54.**

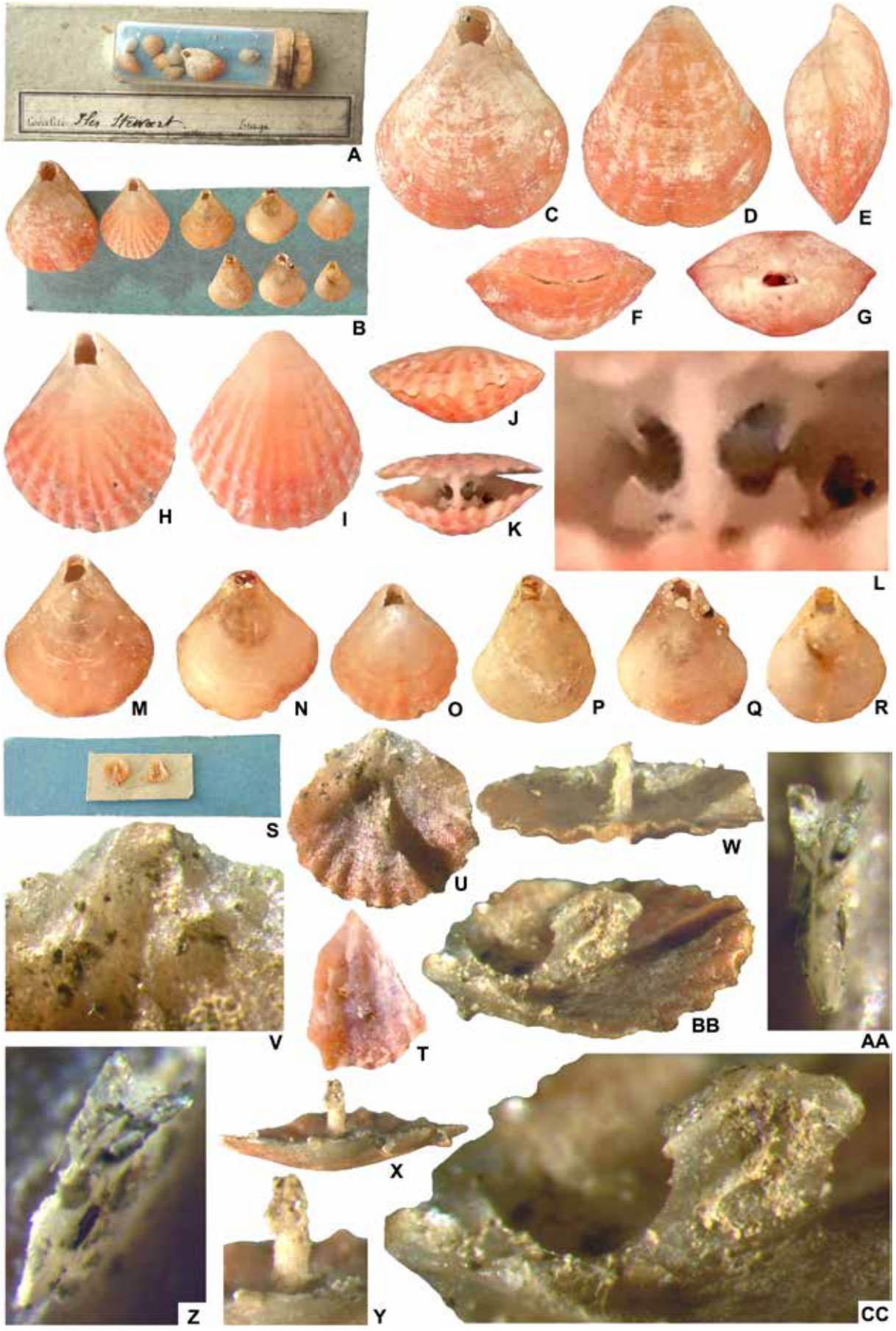
**A-S**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00090 (see also Planche 53A-U); A, detail of the cardinalia and loop of the dorsal valve in the middle of the card (x22), B-C, anterior (B, x47) and posterior (C, x32) views of the loop illustrated in A; D-G, posteroventral (D, x10.5), lateroventral (E, x10.3), posteroventral (F, x8.7), and anterolateral (G, x9.8) views of the dorsal valve in the middle of the card, H, detail of D (x21); I-L, dorsal view of the ventral valve on the right side of the card (I, x7.5), J-L, details of I slightly tilted posterodorsally (J, x9) and anterodorsally (K, x19; L, x8.4); M-S, ventral (M, x7), posteroventral (O, x13.6) posterior (P, x9.5), lateral (Q, x13.2) and lateroventral (R, x22) views of the dorsal valve in the right side of the card (see Planche 52A), N, detail of M (x22), S, detail of Q, slightly tilted lateroventral (x36.4).



## Planche 55.

**A-R**, Terebratellidae genus and species indeterminate, ML-MAL-01284; A, eight articulated specimens loose inside a glass-tube on top of the card-board to which the glass-tube was originally glued, fixed to the card-board there is an old label with 'Iles Stewart' as locality (A, x0.8); B, dorsal view of the eight articulated specimens over the light blue card also loose inside the glass-tube (B, x1.8); C-G, dorsal (C), ventral (D), lateral (E), anterior (F) and posterior (G) views (all x9.5) of the first specimen in the upper row of B; H-L, dorsal (H), ventral (I), and anterior (close, J; semi open, K) views (all x4.3) of the second specimen in the upper row of B; L, detail of K (x21.5); M-R, dorsal view of the following three articulated specimens of the upper row (x4.8, x5 and x5.8, respectively) and the three of the lower row (x4.5, x4.6 and x7, respectively).

**S-CC**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00098; S, a dorsal valve and a broken and only partially preserved ventral valve, probably belonging to the same disarticulated specimen, fixed to a light blue card (x1); T, dorsal view of the fragmentary ventral valve (x6); U-CC, ventral (U, x8.5), anterior (W, x12.7), posterior (X, x11.25) and lateroventral (BB, x15.7) views of the dorsal valve; V, detail of U (x28); Y, detail of X (x25.7), CC, detail of BB (x34.5), Z-AA, detail of dorsal median septum in lateroventral (Z, x62) and ventral (AA, x50) views.



**Planche 56.**

**A-Y**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00101; A, two dorsal valves and the two ventral counterparts fixed to a light blue card (x2.5); B, E, ventral (B, x8) and lateroventral (E, x12.6) views of the dorsal valve in the left side of the card; C, detail of B (x24.5), D, similar to C but slightly tilted posteriorly (x21.6); F-I, dorsal view of the ventral valve on the left side of the card (F, x7.5), G, detail of F (x13.8), H, similar to G but slightly tilted anteriorly (x13.8), I, anterior view of the same ventral valve showing ornamentation and endopunctae (x20); J-W, ventral (J, x8.5), anteroventral (K, x8.5), anteroventral slightly rotated laterally (L, x8.5), anterior (M, x11) and lateroventral (N, x13.7; O, x23.4; V, x20) views of the dorsal valve in the middle of the card; Q, detail of J (x26.7); P, detail of Q slightly rotated lateroventrally (x39); R, detail of K (x30.4); S, detail of L (x41); T, detail of M (x25); U, detail of loop posteriorly viewed (x30); W, cardinalio and loop slightly tilted posteroventrally (x20); X-Y, dorsal view of the ventral valve on the right side of the card (X, x7.5), Y, detail of X (x14).



## Planche 57.

**A-SS**, Terebratellidae genus and species indeterminate, ML-ZOO-MAL-00122; A, six disarticulated dorsal valves and the six ventral counterparts plus another disarticulated ventral valve fixed to a light blue card, plus other four disarticulated dorsal valves and the four ventral counterparts plus two articulated specimens fixed to another card of small size and black colour fixed on the bottom of the bigger sized light blue card (x1.7); B-D, dorsal (B, x5) and anterodorsal (C, x4.6) views of the ventral valve on the left upper corner of the blue card; D, detail of C (x17.6); E-H, ventral (E, x4.2), ventral slightly tilted posteroventrally (F, x5.8) and lateroventrally (G, x5.2) views of the dorsal counterpart of the previous ventral, H, detail of E (x15); I-J, dorsal (I, x7.8) and dorsal slightly tilted anteroventrally (J, x9.8) views of the second ventral valve in the upper row; K-Q, ventral (K, x7.6), anteroventral (L, x16), posteroventral (M, x15.8), anteroventral slightly rotated laterally (N, x15.8) views of the second dorsal valve, O, detail of K (x24.7); P-Q, detail of cardinalio and loop viewed lateroventrally (P, x21) and laterally (Q, x19); R-S, dorsal view of the third ventral valve in the upper row (R, x8.4) and detail of the posterior part (S, x16.8); T-X, ventral (T, x8.2), posteroventral (U, x9.5), anteroventral (V, x7.5) and lateroventral (W, x8.9) views of the third dorsal valve, X, detail of T (x17.3); Y-AA, dorsal (Y) and anterodorsal (Z) views of the ventral valve in the right side of the of the first row in the blue card (both x9), AA, detail of Y (x27); BB, ventral view of the dorsal valve in the top right corner of the card (x6.8); CC, dorsal view of the ventral valve on the left side of the middle row (x8.7); DD-EE, ventral (DD) and anteroventral (EE) views of the dorsal counterpart of the previous ventral valve (both x10.6); FF, interior of both valves (ventral on top, x7.9); GG-HH, dorsal (GG, x4.5) and anterodorsal (HH, x5.5) views of the ventral valve in the middle of the second row; II, dorsal view of the ventral valve fixed on the left side of the small and of black colour card fixed on the bottom of the bigger sized blue card (10.5); JJ, ventral view of the dorsal counterpart of the previous ventral valve (x11.6); KK, dorsal view of the second ventral valve (x11.4); LL, ventral view (x8.2) of the second dorsal valve on the black card; MM-NN, ventral (MM, x12) and posteroventral (NN, x13.6) views of the third dorsal valve; OO-PP, dorsal views (x9.5 and 10.4 respectively) of the third and fourth ventral valves; QQ, ventral view of the latest dorsal valve (x14.5); RR-SS, dorsal views of the two articulated specimens fixed by their ventral valves in right side of black card (x13.8 and x7.4 respectively).





## Planche 58.

**A-J**, *Kraussina rubra* (PALLAS, 1776), ML-ZOO-MAL-00079; A, a dorsal valve and a ventral, probably the counterpart of the preceding, loose in a glass-tube with a light blue card (x1.6); B-F, ventral (B), posteroventral (D), posterior (E) and anterior (F) views of the dorsal valve (all x2.5); C, detail of brachidium (x9); G-J, dorsal (G, x2.9), posterodorsal (H x2.4), posterior (I x2.4) and anterior (J, x2.4) views of the ventral valve.

**K-S**, *Kraussina rubra* (PALLAS, 1776), ML-ZOO-MAL-00085; a dorsal valve and a ventral, probably the counterpart of the preceding, loose in a glass-tube (K, x0.4) with a glass slide and a black card (L, x1); M-O, ventral, (M, x2.5), posteroventral (N, x1.6) and anteroventral (O, x1.6) views of the dorsal valve; P, dorsal view of the specimen with both valves fit together as originally articulated (x1.5). Q-R, dorsal (Q) and ventral (R, both x1.6) views of the ventral valve. S, detail of M (x4.5).

**T-BB**, *Kraussina rubra* (PALLAS, 1776), ML-ZOO-MAL-00130; T, a dorsal valve and a ventral, probably the counterpart of the preceding, loose in a glass-tube with a light blue card (T, x0.7); U-V, ventral (U, x3) and dorsal (V, x1.5) views of the dorsal valve; W-BB, dorsal (W, x1.5), ventral (X, x1.5) anterior (Y, x1.7), lateral (Z, x1.4), anterodorsal (AA, x1) and posterodorsal (BB, x1.5) views of the ventral valve.

**CC-FF**, photographs of the card-boards with an old label with the name '*Kraussina rubra*' or only '*Kraussina*' written on them (x0.6).



## Planche 59.

**A-R**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00028; A, photograph of the old label, x0.8; B, two specimens, one disarticulated and the other articulated fixed to a card (x1.2); articulated specimen in dorsal (C, x2.2), posterior (D, x2.5), anterior (E, x2.5), lateral (F, x2.7), posterodorsal (G, x2.5) views, and detail of the umbonal area (H, x6.7); lateral view of the shell open showing the loop (I, x3.2); J-M, different views of the shell open showing loop (x2.5) and mantle strongly spiculate (K, x5.2); dorsal view of the ventral valve (N, x2.5); O-R, ventral (O, x3.5), posteroventral (Q, x3.1) and anterior (R, x3.6) views of the dorsal valve (P, detail of the loop in O, x8).

**S-Z**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00033 (see also Planche 60A-D); S, photograph of the old label, x0.8; T, five articulated specimens fixed to a card (x2); dorsal view of the specimen in the left side of the first row (U, x6.7); ventral views of the specimen in the middle of the first row (V, x6.9, W, x4.7); dorsal view of the specimen in the left side of the second row (X, x10); dorsal views of the specimen in the middle of the second row (Y, x5, Z, x10.6); posterior view of the bigger specimen (AA, x3.4); detail of the bryozoan colony (BB, x8).

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*Wegelia truncata* *Wegelia*  
*Wegelia*



*Wübbelstria truncata* *Linné* sp.  
*Coralie la Galite* (dunis) *Paaf* 111



## Planche 60.

**A-D**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00033 (see also Planche 59T-Z); ventral (A, x2.5), posteroventral (B, x2.7) and posterior (with the shell open, C, x5) views of the bigger specimen in Planche 59T, and detail of the loop (D, x7.7).

**E-L**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00018; E, a dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (x1); F, photograph of the text written by hand in the reverse of the card (x1); G-J, ventral (G), posteroventral (H) and lateroventral (I, and slightly rotated laterally, J) views of the dorsal valve (all x12.7); K, detail of H (x23); L, dorsal view of the ventral valve (x10).

**M-P**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00001; M-N, a dorsal valve and a fragmented ventral fixed to a blue card (N, x2.2) introduced in a glass-tube fixed to a cardboard with an old label fixed to it (M, x0.8); P, photograph of the text written by hand in the reverse of the card (x1.5); O, enlargement of the valves (x2.8).

**Q-S**, *Megerlia truncata* (LINNAEUS, 1767), ML- MAL-01283; Q, articulated specimen fixed by its dorsal valve to a light brown card (x1); R, enlargement of the specimen (x2.6); S, photograph of the text written by hand in a piece of paper (x1).

**T-AA**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00067; T, the three articulated specimens of this lot (x1.5); U, enlargement of the specimen fixed by its dorsal valve on the right of the card (x2.8); V-AA, dorsal (V), ventral (W), posterior (X), lateral (Y) and anterior (Z) views of the specimen in the middle of the card (all, x2); AA, anterior view of the previous specimen with the valve open (x2.5).



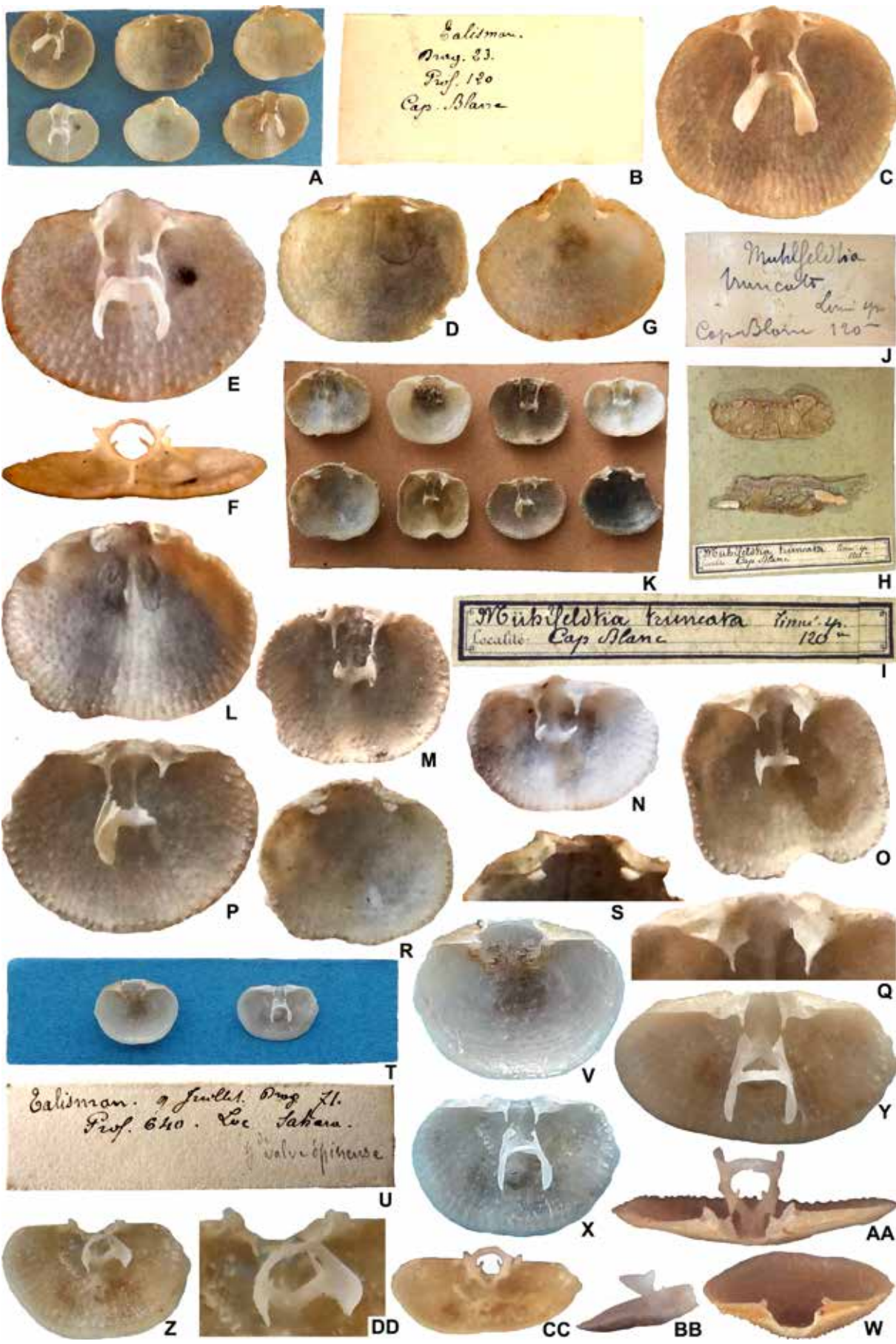
## Planche 61.

**A-G**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00019; A, three disarticulated dorsal valves and three ventral, probably the counterpart of the preceding, fixed to a light blue card (x1); B, photograph of the text written by hand in the reverse of the card (x1); C, ventral view of the dorsal valve on the upper left corner in A (x2.3); D, dorsal view of the ventral valve in the middle of the upper row (x2.2); E-F, ventral (E) and anterior (F) views of the dorsal valve on the lower left corner in A (both x3.9); G, dorsal view of the ventral valve on the middle of the lower row in A (x2.75).

**H-S**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00021; H, photograph of the card-board to which the glass-tube, now detached, was probably originally glued (x0.4); I, enlargement of the old label fixed in the card-board (x1); J, photograph of the text written by hand in a second card also introduced in the glass-tube (x0.6); K, five disarticulated dorsal valves and three ventral, fixed to a light brown card (x1); L-Q, ventral view of the dorsal valves ordered from left to right and starting for those of the first row (L, x3.4; M, x2.5; N, x2.4; O, x3; P, x3.3), Q, detail of O (x5); R, dorsal view of the ventral valve on the lower left corner in K (x2.3); S, detail of the ventral valve on the lower right corner in K (x4.2).

**T-DD**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00052; T, a dorsal valve and a ventral, probably the counterpart of the preceding, fixed to a light blue card (x1.3); U, photograph of the text written by hand in the reverse of card (x1.3); V-W, dorsal (V, x3.4) and posterodorsal (W, x3) views of the ventral valve; X-DD, ventral (X, x3.4), posteroventral (Y, x4.4), anteroventral (slightly rotated laterally, Z, x3), posterior (AA, x4.6), lateral (BB, x3) and anteroventral (CC, x3) views of the dorsal valve; DD, detail of Z (x6.7).





## Planche 62.

**A-T**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00069; A, four disarticulated dorsal valves and three ventral fixed to a light blue card (x1.3); B, dorsal view of the ventral valve on the left side of A (x3.7); C, detail of B (x13.7); D, ventral view of the first dorsal valve (x3), E-F, detail of D (slightly rotated in F, both x7.8); G, dorsal view of the second ventral valve (x5.4); H-I, ventral views (slightly rotated laterally in I) of the second dorsal valve (both x5.7); J, detail of I (x10.7); K, ventral view of the third dorsal valve (x3.4); L-M, detail of K (slightly tilted anteroventrally in M, both x15); N, ventrolateral view of the brachidium of previous dorsal valve (x8); O-P, dorsal (O, x8) and posterodorsal (P, x8.5) views of the ventral valve on the upper right corner in A; Q-R, detail of the lower right corner in A (Q, x5; R, x9.4); S-T, ventral (S, x12) and anteroventral (T, x12.6) views of the dorsal valve on the lower right corner in A.

**U-AA**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00092; U, five disarticulated dorsal valves and a ventral on the light blue card from which the valves seem to have been detached (x1.6); V, spiculate interior of the ventral valve on the top left corner in U (x2.2); W-AA, ventral view of the dorsal valves (x2.4, x2.5, x2.9, x3.3 and x3, respectively).



### Planche 63.

**A-M**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00073; A, three articulated specimens and a ventral valve fixed to a light blue card (x1.5); B-C, anterior (with the shells open) and posterior views of the three articulated specimens (both, x2); D-E, ventral (D, x2.2) and anterior with the valve open (E, x3.5) views of the articulated specimen on the left side of the card; F-H, dorsal (F), posterior (G) and anterodorsal with the shell open (H, all x2.7) of the second articulated specimen; I-J, ventral (I, x2.8) and posterior (J, x3) views of the third articulated specimen; K, dorsal view of the ventral valve on the right side of the card (x2.3); L, detail of K (x9.7); M, posterior view of this valve (x4.8).

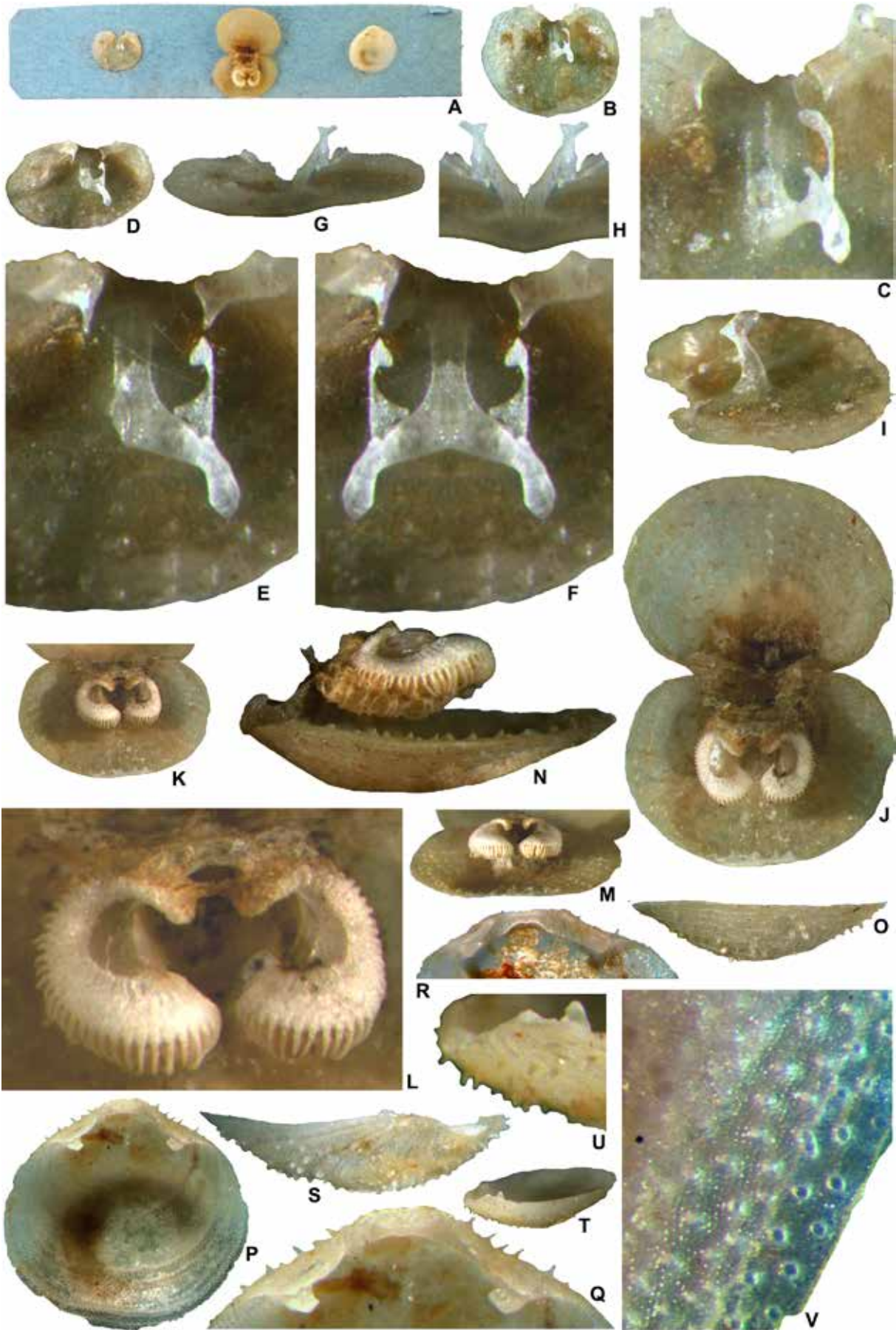
**N-V**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00076; N, four articulated specimens fixed to a light blue card (x1.3); O-P, anterior (with the shells open, O) and posterior (P) views of the card with the four specimens fixed to it (both views x1.4); Q, anterolateral view of the articulated specimen on the left side of the card (x3); R-S, anterolateral views of the second articulated specimen with the shell open and slightly tilted ventrally (R, x3) and dorsally (S, x4); T, anterior view of the third specimen with the shell open (x3.5); U-V, anterior views of the specimen on the right side of the card with the shell open and slightly tilted dorsally (U) and ventrally (V, both x2.5).

**W-KK**, *Megerlia truncata* (LINNAEUS, 1767), ML-MAL-01293; W, two disarticulated dorsal valves and two ventral fixed to a light brown card plus a loose disarticulated dorsal valve (that in the middle of the first row) and a ventral (the first in the left of the second row) (x1.4); X-Y, interior of the ventral valve in the middle of the second row (X, x2.8) and of the dorsal valve in the upper left corner of the card (Y, x2.7); Z-DD, dorsal (Z), ventral (AA), anterior (BB), posterior (CC) and lateral (DD) views of one of the two articulated specimens loose in the glass-tube (all x1.8); EE-II, dorsal (EE), ventral (FF), anterior (GG), posterior (HH) and lateral (II) views of the second articulated specimen loose in the glass-tube (all x1.5); JJ-KK anterior views of the second specimen with the ventral valve on top, the shell open (KK, x2) and slightly tilted ventrally (JJ, x2.6).



#### **Planche 64.**

**A-V**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00075; A, a dorsal valve and a ventral, probably belonging to the same specimen, and another dorsal valve and a ventral completely open but still slightly joined posteriorly and fixed to a blue card (x1.6); B-I, ventral (B, x4.8), anteroventral (D, x5.2), anterior (G, x9) and lateroventral (I, x10.4) views of the disarticulated dorsal valve on the left side of the card; C, detail of B (x28); E, detail of D (x18.7); F and H, similar to E and G (respectively) but with the broken loop symmetrically 'reconstructed' (F, x18.7; H, x13.5); J, interior of the specimen in the middle of the card (x7.4); K-N, anteroventral (K, x5.2; M, x5.7) and lateral (N, x15) views of the dorsal valve of the specimen in the middle of the card; L, detail of K (x21.5); O, anterior view of the ventral valve of the previous specimen (x7); P-V, dorsal (P, x8.8), lateral (S, x11) and laterodorsal (T, x5) views of the disarticulated ventral valve in the left side of the card; Q, detail of P (x17); U, detail of T (x19), R, detail of P, slightly tilted posteriorly (x10); V, detail of the anterolateral margin of this ventral valve (x116).



**Planche 65.**

**A-Q**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00080; A, two articulated specimens fixed to a light blue card (x2.3); B-L, dorsal (B) and lateral (C) views of the specimen of bigger size (both x5.8); D, detail of B (x18); E, detail of the pedicle aperture (x30); F, detail of B (x23); G, I, anterolateral views (G, x14; I, x17) of this specimen with the shell open and the ventral valve on top; H, detail of G (x47); J, detail of the tubercles near the anterior commissure (x30); K-L, detail of teeth (K, x40; L, x45); M-Q, ventral (M, x8.6), anteroventral (N, x10) and lateral (O, x18.8) views of the articulated shell of smaller size; P, detail of M (x37); Q, anteroventral view of the latest specimen with the shell open and ventral valve on top (x23).





## Planche 66.

**A-S, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00107;** A, two articulated specimens, three disarticulated dorsal valves and three ventral and on top of the blue card from which the valves seem to have been detached (x1.5); B, photograph of the text written by hand in the reverse of the card (x1.5); C-D, ventral view of the dorsal valves on the upper row in A (C, x3; D, x3,2); E-F, dorsal view of the first two ventral valves (E, x3,2; F, x3); G-H, ventral (G, x2.9) and anterior (with the ventral valve on top and the shell open; H, x3.6) views of the articulated specimen on the right of the second row in A; I-Q, dorsal (I), ventral (J), posterodorsal (K), anterior (L) and posterodorsal (N, all x1.7) views of the articulated specimen on the bottom left corner in A; O, detail of N (x4); P, detail of I (x5); Q, detail of the lateral commissure in M (x8.5); R, dorsal view of the ventral valve on the middle of the lower row in A (x3); S, ventral view of the dorsal valve on the bottom left corner in A (x2.8).

**T-EE, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00113;** T, a disarticulated dorsal valve and a ventral, probably belonging to the same specimen, plus another disarticulated dorsal valve fixed to a light blue card (x1.6); U-W, dorsal (U) and posterodorsal (V, W, all x2.2) views of the ventral valve on the left side of the card; X-BB, posteroventral (X, x2.2; Y, x2.6), ventral (Z, x2.6) and anteroventral (AA, x2.3) views of the dorsal valve on the middle of the card; BB, detail of AA (x5.3); CC-EE, ventral (CC, x2.8) anterior (DD, x2.8) and posteroventral (EE, x2.7) views of the dorsal valve on the right side of the card.



## Planche 67.

**A-N**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00125; A, two articulated specimens and a disarticulated ventral valve (that in the middle of the first row) fixed to a blue card (x1.5) plus a loose ventral valve and two dorsal; B-C, detail of the internal posterior region of the two disarticulated ventral valves (B, x6; C, x3.6); D-G, posterodorsal (D, x2.5) and anterior views with the shell open of the articulated specimen (E, x2.6) on the right top corner in A; F, detail of E (x8.5); G, detail of the ornamentation in the dorsal sulcus (x7); H-K, ventral (H, x2.4) and anteroventral (I, x3.2) views of the dorsal valve first on the second row in A; J, detail of I (x7.5); K, detail of H, slightly tilted posteroventrally (x5); L-N, posteroventral view of the dorsal valve in the middle of the lower row in A (L, x5); M-N, detail of the brachidium viewed ventrally (M, x4.6) and anteroventrally (N, x7.7).

**O-BB**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00127; O, two articulated specimens, three dorsal valves and one ventral fixed to a light blue card (x1.3); P, dorsal view of specimen in the left upper corner of the card (x2.5); Q, ventral view of the specimen in the middle of the upper row in the card (x2); R-S, ventral view (R, x2.7) and detail (S, x5.8) of the dorsal valve on the right upper corner in the card; T-X, ventral (T, x4), anteroventral (V, x4) and anterior (X, x3) views of the dorsal valve in the left bottom corner of the card; U, detail of T (x9); W, detail of V (x7.2); Y-Z, anterior (Y, x4) and ventral (Z, x8.7) views of the dorsal valve in the middle of the lower row in the card; AA, dorsal view of the ventral valve in the right side of the lower row in the card (x3.2); BB, detail of AA (x7.6).



**Planche 68.**

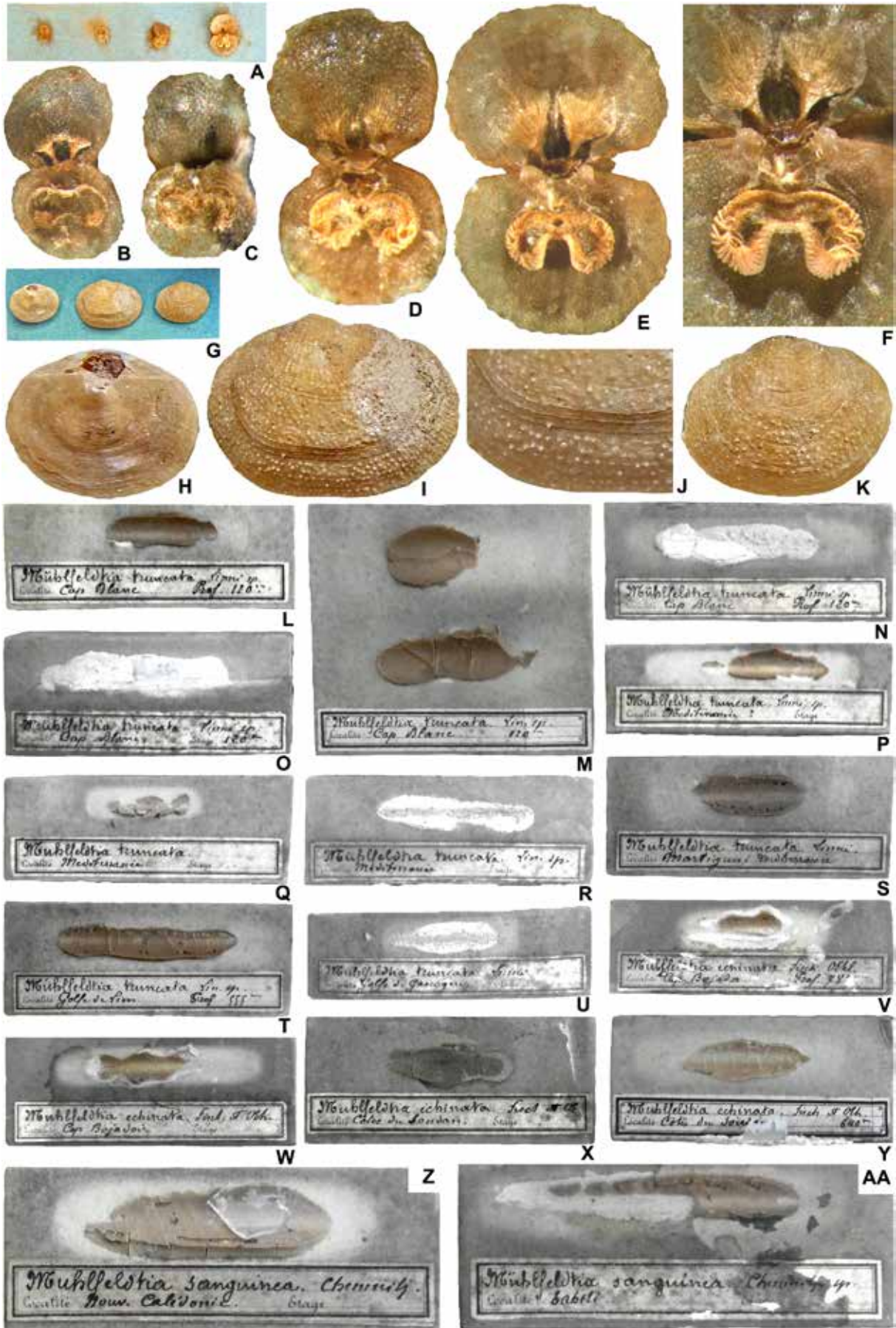
**A-F**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00138; A, four specimens completely open and fixed to a light blue card (x1.2); B-E, interior of the four specimens (B-C, x11.5; D, x15; E, x8.5); F, detail of E (x12).

**G-K**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-00139; G, three articulated specimens fixed to a light green card (x0.8); H, dorsal view of the specimen on the left side of the card (x3.2); I, ventral view of the specimen in the middle of the card (x3.2); J, detail of I (x5.3); K, ventral view of the specimen on the right side of the card (x3).

**L-U**, card-boards from which the glass-tubes have been detached, with an old label with the name '*Mühlfeldtia truncata* Linné sp.' written on it (all x0.6).

**V-Y**, card-boards from which the glass-tubes have been detached, with an old label with the name '*Mühlfeldtia echinata* Fisch et OEh' written on it (all x0.6).

**Z-AA**, card-boards from which the glass-tubes have been detached, with an old label with the name '*Mühlfeldtia sanguinea* Chemnitz' (*sic*) written on it (both x0.9).



## Planche 69.

**A-G**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00031; A, photograph of the old label, x1; B, disarticulated specimen fixed to a card (x2.75); C-D, dorsal valve in ventral (C, x7.2) and posteroventral (D, x6.6) views; detail of cardinalium in the radial tuberculate dorsal valve (E, x6); F, dorsal view of ventral valve (x6.2); G, detail of posterior sector of ventral valve showing pedicle collar and teeth (x10).

**H-O**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00024; H, disarticulated dorsal valve and a ventral, probably belonging to the same specimen (x2.3); I, photograph of the text written by hand in the reverse of the card (x2.3); J-K, card-boards with 'S. Paul' as 'Localité' (x0.7 and x0.6 respectively); L-M, anteroventral (L) and posteroventral (M, both x4.5) views of the dorsal valve; N-O, anterodorsal (N) and posterodorsal (O, both x4.5) views of the ventral valve.

**P-T**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00057; P, disarticulated dorsal valve and a ventral, probably belonging to the same specimen (x1.3); Q-R, ventral (Q) and posteroventral (R, both x5.6) views of the dorsal valve; S-T, dorsal (S) and posterodorsal (T, both x5.6) views of the ventral valve.

**U-AA**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00129; U, disarticulated dorsal valve and a ventral, probably belonging to the same specimen (x2.2); V, dorsal view of the ventral valve (x8.7); W-AA, dorsal (W, x8.7), posteroventral (X, x6.8), ventral (Y, x8.7) and anteroventral (Z, x8.7) views of the dorsal valve; AA, detail of Z (x28.8).

**BB-EE**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00097 (see also Planches 70A-T, 71A-S); BB, five disarticulated dorsal valves and three articulated specimens (x1.6); CC-DD, ventral (CC, x4.9) and posteroventral (DD, x6.4) views of the first dorsal valve in the upper row; EE, detail of DD (x11).



*Kraussonia (Megerlina) Davidsoni* Vel.  
Locality: S. Paul.



B



G



H



J



U



V



AA



E



A



C



D



F



L



N



M



O



K



P



Q



R



S



T



X



Y



W



Z



BB



CC



DD



EE

**Planche 70.**

**A-T**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00097 (see also Planches 69BB-EE, 71A-S); A-D, dorsal (A) and anterodorsal (B, both x6.2) views of the dorsal valve on the left side of the card (see Planche 69BB); C, detail of A (x14.5); D, detail of B (x13.8). E, ventral view of the second dorsal valve (x14.2); F-I, details of the cardinalio and loop viewed ventrally (G, x36), anteroventrally (F, x20; H, x18) and posteroventrally (I, x22.72). J-P, ventral (J, x7.6) and anteroventrally (M and N, both x11.8) views of the third dorsal valve; K, detail of J (x11.8); L, detail of K (x31.2), O-P, details of M (O, x15.7; P, x16.5). Q-T, dorsal (Q, x13), anterodorsal (S, x11.7) and posterodorsal (T, x12.5) views of the fourth specimen (first articulated and fixed by its ventral valve); R, detail of Q (x16).



## Planche 71.

**A-S**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00097 (see also Planches 69BB-EE, 70A-T); A-E, ventral (A, x9.7), posteroventral (B, x9.7), lateroventral slightly rotated (C, x6.7) and anteroventral (D, x9.7) views of the third dorsal valve (fifth specimen from the right in Planche 69BB); E, detail of B (x22.6). F-I, ventral (F, x14.3), posteroventral (G, x14; H, x10.6) and anterior (with ventral valve on top, I, x10.8) of the second articulated specimen (sixth specimen from the right in Planche 69BB); J-O, anteroventral (J, x12.8; L, 11.3), posteroventral (K, x11) and ventral (M, x9.4) views of the dorsal valve of the previous specimen once disarticulated; N, detail of L (x60); O, detail of K (x36.3); P, dorsal view (x9.6) of the ventral valve of the previous specimen. Q-R, ventral (Q, x6.2) and anteroventral (R, x6.9) views of the fourth dorsal valve (seventh specimen from the right in Planche 69BB); S, ventral view of the third articulated specimen (that on the right side in Planche 69BB; x11.8).



**Planche 72.**

**A-V**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00071; A, two disarticulated dorsal valves and five ventral valves (x1.3); B-G, ventral (B, x5.5), lateroventral (C, x7.3), anterior (D, x7.3), posteroventral (E, x7.3) and posterior (F, x7.3) views of the dorsal valve on the left side of the card in A; G, detail of B (x20.2). H, dorsal view of the first ventral valve (x5.5). I-N, ventral (I, x7.5), anterior (J, x7.7), lateroventral (K, x6.6) and posteroventral (L, x7.9) views of the second dorsal valve (third specimen of the card in A); M, detail of K (x28); N, detail of I (x21.7). O-S, ventral (O, x5), posterior (P, x4.4), anteroventral (Q, x4.1) and posteroventral (R, x5.3) views of the third dorsal valve (fourth specimen of the card in A); S, detail of O (x17.6). T-V, dorsal view of the three ventral valves on the right side of the card in A (x5.1, x5.9 and x5.4 respectively).



**Planche 73.**

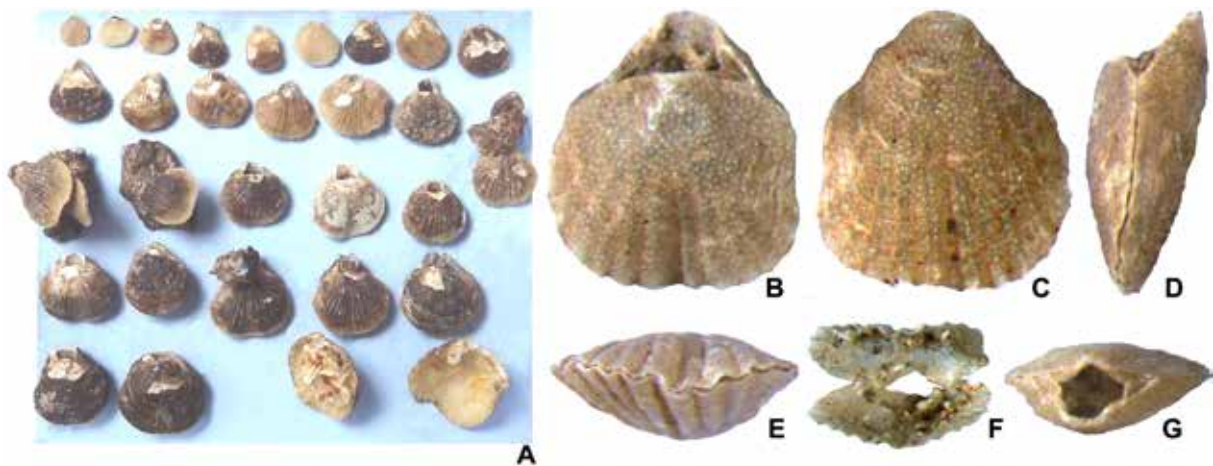
**A-T**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00074; A, two articulated specimens fixed to a blue card (x1.5); B-L, dorsal (B, x4.2), lateral [closed (C, x7.3) and partially open (D, x5.4)], posterodorsal (E, x4.2), anterodorsal [closed (F, x5.5) and open (G, x5.5)] and anterior (H, x8.5) views of the specimen of bigger size; I, detail of B (x11.5); J, detail of B (x25); K, anteroventral view of part of the interior of the dorsal valve (x4.8); L, detail of K (x20). M-T, dorsal (M), posterodorsal (N) and lateral (O, all x11) views of the smaller specimen, P, anteroventral view of the this specimen with the shell open and the ventral valve on top (x28), Q-R, lateroventral (Q, x20) and ventral (R, x26) views of the dorsal valve of the small specimen; S, detail of P (x52); T, detail of the posterior region of the ventral valve interior (x18).





**Planche 74.**

**A-Z**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 75, 76, 77, 78, 79); A, twenty eight articulated specimens, and a disarticulated dorsal valve and a ventral (x1.7); B-Q, dorsal (B, x13.6), ventral (C, x13.6), lateral (D, x13.6), anterior [closed (E, x13.6) and open (F, x10)], posterior (G, x11.5), posterodorsal (H, x13.6), anteroventral (with the shell open and the ventral valve on top, I, x13.6), anterior (J, x27) and lateroventral (with the shell open and slightly tilted and/or rotated and the ventral valve on top; K-M, the three x7) views of the first specimen (that in the left upper corner in A); N, detail of I (x50); O, detail of K (x30); P, detail of L (x20); Q, detail of M (x20). R-Z, dorsal (R), ventral (S), lateral (T), posterodorsal (U), anterior [closed (V), slightly open (W) and open with dorsal valve on top (X) or ventral on top (Y)] views of the second specimen, all x10.5; Z, detail of Y (x26).



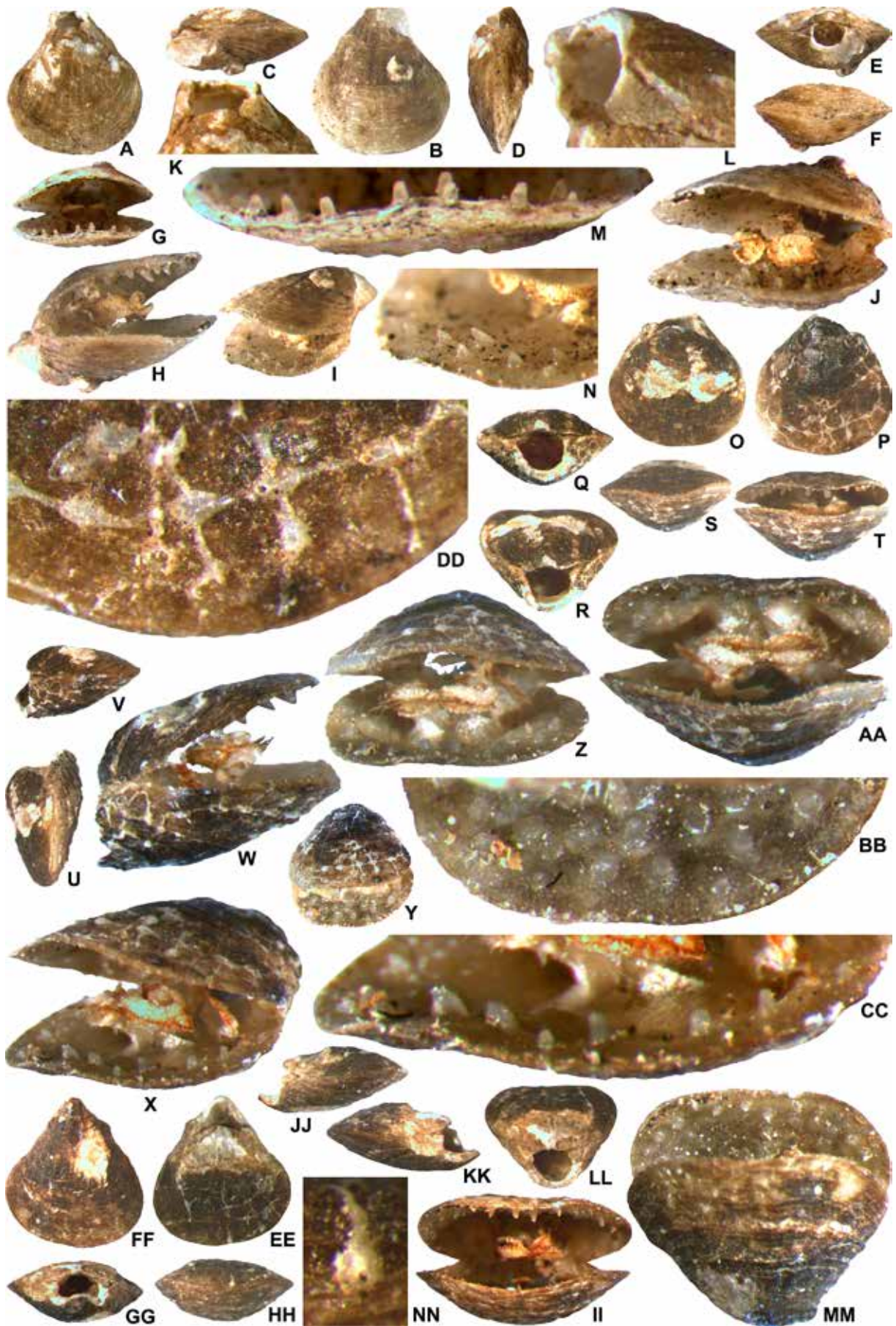
## Planche 75.

**A-NN**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 74, 76, 77, 78, 79); A-G, dorsal (A), ventral (B), lateral (C), posterior (D), anterior [closed (E), and open (F)] and lateral, slightly rotated (G) views of the third specimen in Planche 74A, all x10 [except F (x16.5) and G (x11.4)]; H-L, dorsal (H), ventral (I), posterior (J), anterior (K), lateral (L) views of the fourth specimen in Planche 74A (all x9); M-U, dorsal (M), ventral (N), posterior (O), anterior (P), lateral (Q) views of the fifth specimen in Planche 74A (all x8); R-S, anterior (R) and anteroventral (S) views of the shell open, slightly rotated and with the ventral valve on top (both x10.6); T, detail of R (x30); U, detail of S (x30). V-FF, dorsal (V), ventral (W), anterior (X), posterior (Y), posterodorsal (Z), lateral (AA) views of the sixth specimen in Planche 74A (all x8); BB, lateral view of the same specimen, with the shell open (x11.5); CC, detail of BB (x21); DD-EE, anteroventral (DD) and anterolateral (EE) views of the same specimen, slightly rotated and ventral valve on top (DD, x11.5; EE, x10); FF, detail of EE (x25). GG-NN, dorsal (GG), ventral (HH), lateral (II), posterodorsal (JJ), anterior [with the shell closed (KK) and open (LL)] and posterior (MM) views of the seventh specimen in Planche 74A [all x6.3, except LL (x15.7) and MM (x16.2)]; NN, detail of JJ (x27.7).



## Planche 76.

**A-NN**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 74, 75, 77, 78, 79); A-N, dorsal (A), ventral (B), lateral (C, D), posterior (E), anterior [closed (F), and open with ventral valve on top (G)], lateral (with the shell open, H) and lateroventral (I and J) views of the eight specimen in Planche 74A [all x6.2, except H (x8.5), I (x5) and J (x10)]; K, detail of A (x12.4); M, detail of G (x22); N, detail of I (x12). O-DD, dorsal (O), ventral (P), posterior (Q), posterodorsal (R), anterior [with the shell closed (S), and open (T)] [all x6.3, except T (x7.3)], lateral [with the shell closed (V, x5.5; U, x6.3) and open (W, x11)], anterolateral (with the ventral valve on top (X, x10), anteroventral [with the ventral valve on top (Y, x5.8; Z, x12.3)] and anterior (AA, x13.6) views of the ninth specimen (that on the upper right corner in Planche 74A); BB, detail of Y (x21.3); CC, detail of X (x21); DD, detail of P (x64). EE-NN, dorsal (EE), ventral (FF), posterior (GG), anterior [with the shell closed (HH) and open (II)], lateral (JJ and KK), posterodorsal (LL) and anteroventral (MM) views of the tenth specimen in Planche 74A [all x5.7, except II (x8.7) and MM (x10.7)]; NN, detail of HH (x50).



## Planche 77.

**A-YY**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 74, 75, 76, 78, 79); A-K, dorsal (A), ventral (B), lateral (C), posterior (D), anterior [with the shell closed (E), and open with dorsal valve on top (F, x9.7) and ventral on top (G, x9.7)], lateral with the shell open and ventral valve on top (H, x9.5) and dorsal on top (I, x8.5) views of the eleventh specimen in Planche 74A (all x5.8, except otherwise stated); K, detail of F (x22); J, detail of G (x20). L-Q, dorsal (L), ventral (M), lateral (N), posterior (O), anterior [with the shell closed (P), and open (Q)] views of the twelfth specimen in Planche 74A (all x5). R-X, dorsal (R), ventral (S), lateral (T), anterior (U, x7.6), posterior (V) lateral (W, x14) views of the thirteenth specimen in Planche 74A (all x5.4, except otherwise stated); X, detail of the anterior commissure in S (x45). Y-FF, dorsal (Y), ventral (Z), anterior [with the shell closed (AA) and open and slightly rotated (BB, x8)], posterior (CC), lateral (DD) and lateroventral (with the shell open, EE, x8.5) views of the fourteenth specimen in Planche 74A (all x4.3, except otherwise stated); FF, detail of CC (x13.8). GG-QQ, dorsal (GG), ventral (HH), lateral (II and JJ), posterior (KK), anterior [with the shell closed (LL, x6.2), or open and with dorsal valve on top (MM, x6.2) or with the ventral valve on top (NN, x7 and OO)] views of the fifteenth specimen in Planche 74A (all x4.5, except otherwise stated); PP, detail of OO (x11); QQ, detail of GG (x22.5). RR-WW, ventral (RR, x4.7), lateral (SS, x4 and WW, x5.4), dorsal (TT, x4) and anterior [with the shell closed (UU, x5.3) and open (VV, x4.7)] of the sixteenth specimen (last of the second row in Planche 74A). XX-YY, lateral (XX, x5) and anterior (YY, x7.5) views of the specimens on the left side of the third row in Planche 74A.





## Planche 78.

**A-SS**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 74, 75, 76, 77, 79); A-G, anterior [with the shell closed (A, x4.7) or slightly open (B, x7.2)], ventral (C, x4.7), dorsal (D, x4.7) and lateral (E, x6 and F, x6.69) views of the eighteenth specimen in Planche 74A; G, detail of C (x23). H-N, dorsal (H), ventral (I), lateral (J), anterior [with the shell closed (K), and open with the ventral valve on top (N, x8)], posterior (L) and posterodorsal (M, x5.8) views of the nineteenth specimen in Planche 74A (all x4.7, except otherwise stated). O-W, dorsal (O), ventral (P), posterior (Q), anterior [with the shell closed (R), and open with the ventral valve on top (U, x7.6)], lateral (S, x5.4) and anterolateral (T, x6) views of the twentieth specimen in Planche 74A (all x4.2, except otherwise stated); V, detail of O (x22.4); W, detail of O (x12.5). X-FF, dorsal (X), ventral (Y), posterior (Z), anterior [with the shell closed (AA), and open (BB, x8.6)], lateral (CC) and anterolateral [with ventral valve on top, DD (x8.6)] views of the twenty-first specimen (last of the third row in Planche 74A); EE, detail of X (x13.3); FF, detail of the anterior commissure in Y (x17.5) (all x5, except otherwise stated). GG-SS, dorsal (GG, x3.7), ventral (HH, x3.7), posterior (II, x5.2), anterior [with the shell closed (JJ, x5.2), or open with the ventral valve on top (MM and NN, both x6.5)] and lateral [with the shell closed (KK, x4.5) or open and the ventral valve on top, LL (x7.4)] views of the twenty-second specimen (first of the fourth row in Planche 74A); PP, detail of HH (x6.6); OO and QQ, details of GG (x6.5 and x9 respectively); RR, detail of MM (x15); SS, detail of NN (x13).



## Planche 79.

**A-LLL**, *Megerlina davidsoni* (VÉLAIN, 1877), ML-ZOO-MAL-00121 (see also Planches 74, 75, 76, 77, 78); A-I, dorsal (A, x4.2), ventral (B, x4.2), lateral (C, x4.2), posterior (D, x4.2) and anterior [with the shell closed (E, x4.2), or open with the dorsal valve on top (G, x5.6) or the ventral valve on top (F, x5.6)] views of the twenty-third specimen in Planche 74A; H, detail of the anterior commissure in A (x10.5); I, detail of B (x7). J-Q, dorsal (J), ventral (K), posterior (L) and anterior (M) and lateral (N) views of the twenty-fourth specimen in Planche 74A (all x3.7, except otherwise stated); O, lateroventral view of the previous specimen (x3.5) and detail of the ventral umbo showing protegulum (P, x7.7); Q, detail of the anterior commissure in J (x10). R-X, dorsal (R), ventral (S), lateral (T), posterior (U) and anterior views of the twenty-fifth specimen in Planche 74A [with the shell closed (V) or slightly open (W) (all x4); X, detail of R (x10.7). Y-II, dorsal (Y), ventral (Z), posterior (AA), anterior [with the shell closed (BB) or slightly open (CC, x5), lateral [with the shell closed (DD) or slightly open (EE)] and anteroventral (slightly rotated, FF, x4.3) views of the twenty-sixth specimen in Planche 74A (all x3.7, except otherwise stated); GG, detail of EE (x7); HH, detail of CC (x18.3), II, detail of the anterior commissure in Z (x11). JJ-UU, dorsal (JJ), ventral (KK), lateral [with the shell closed (LL) or open (PP, x4.6)], posterior (MM), anterior [with the shell closed (NN) or slightly open (OO, x4.6)] and anterior (QQ, x5.2) and anteroventral (SS, x4.3; both with the ventral valve on top and the shell open) views of the twenty-seventh specimen (that on the bottom left corner in Planche 74A); RR, detail of PP (x12.5); TT, detail of KK (x7); UU, detail of JJ (x9) (all x4, except otherwise stated). VV-FFF, dorsal (VV), ventral (WW), lateral (XX), posterior (YY), anterior [with the shell closed (ZZ) or open with the ventral valve on top (AAA) or the ventral on top (BBB)], anteroventral (CCC), anterolateral (DDD), and lateral (EEE, x4.8) views of the twenty-eighth specimen in Planche 74A (all x3.3, except otherwise stated), FFF, detail of BBB (x8.8). GGG-LLL, exterior (GGG), interior (HHH) and anteroventral (III) views of the dorsal valve placed in the third position on the bottom row of Planche 74A; exterior (JJJ), interior (KKK) and posterodorsal (LLL) views of the ventral valve on the bottom right corner on Planche 74A (all x3).



## Planche 80.

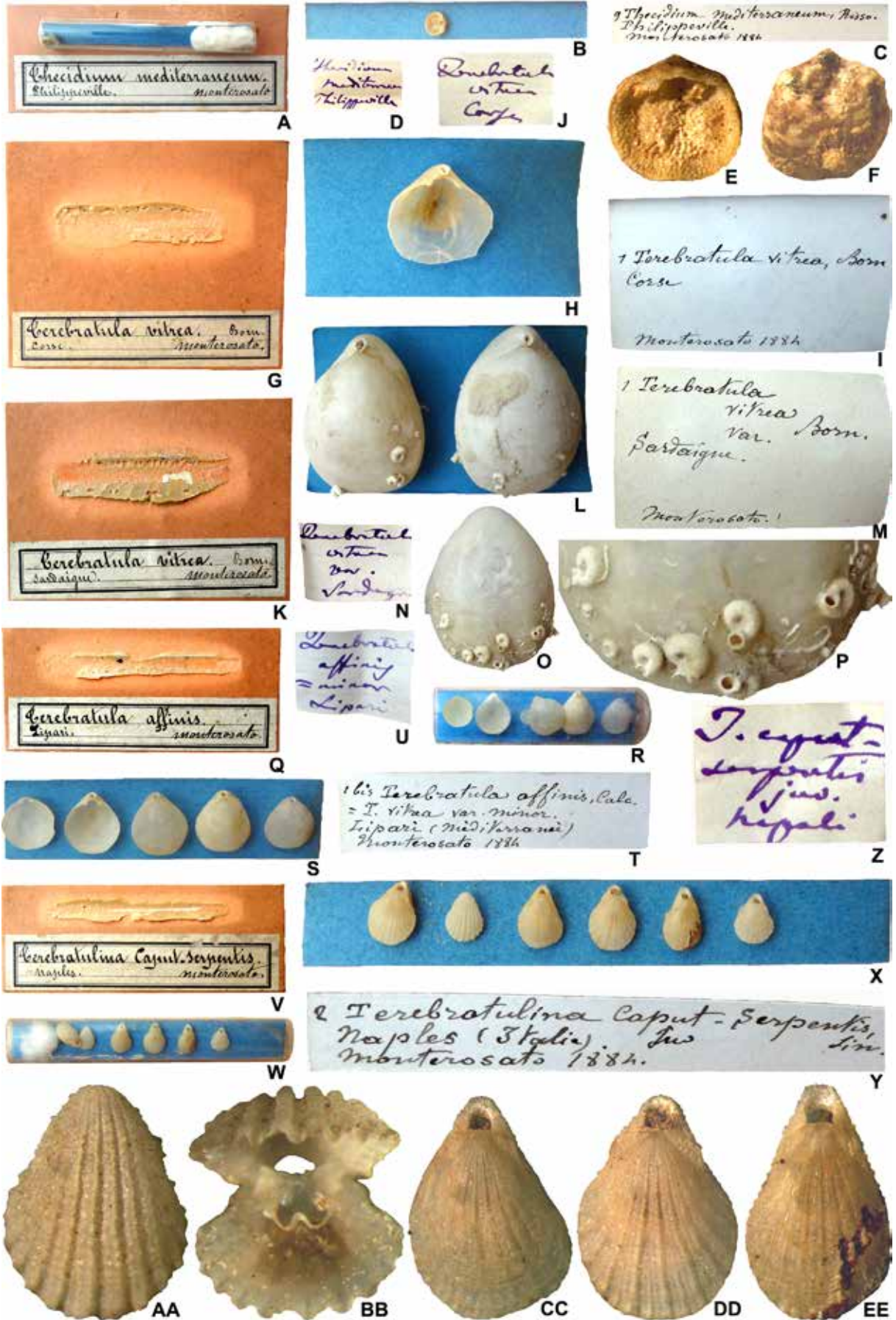
**A-F**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00885; A, photograph of the card-board to which the glass tube is glued (x0.6); B, a loose ventral valve on top of a blue card from which the valve seems to have been detached (x1); C, text written by hand in the reverse of the card (x1); D, folded piece of paper included in the tube, with the words 'Thecidium mediterraneum Philippeville.' written on it (x0.5); interior (E) and exterior (F) of the ventral valve (both x5).

**G-J**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-01269; G, photograph of the card-board from which a glass-tube have been detached (x0.6); H, loose ventral valve on top of a blue card from which the valve seems to have been detached (x1); I, text written by hand in the reverse of the card (x1); J, folded piece of paper included in the tube, with the words 'Terebratula vitrea Corse' written by hand (x0.7).

**K-P**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-01270; K, photograph of the card-board from which a glass-tube have been detached (x0.6); L, two loose articulated specimens on top of a blue card from which the specimens seem to have been detached (x1); M, text written by hand in the reverse of the card (x0.9); N, folded piece of paper included in the tube, with the words 'Terebratula vitrea var. Sardaigne' written by hand (x0.7); O, ventral view of the specimen on the right side in L (x1); P, detail of the anterior region of the ventral valve illustrated in O showing epifauna (x2.7).

**Q-U**, *Gryphus vitreus* (BORN, 1778), ML-ZOO-MAL-01271; Q, photograph of the card-board from which a glass-tube have been detached (x0.6); R, glass-tube with three articulated specimens and a ventral and a dorsal valves fixed to a light blue card (x0.6); S, blue card with the specimens fixed to it (x1); T, text written by hand in the reverse of the card (x1); U, folded piece of paper included in the tube, with the words 'Terebratula affinis = minor. Lipari' written by hand (x0.7).

**V-EE**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-01266 (see also Planche 81, A-F); V, photograph of the card-board from which a glass-tube have been detached (x0.6); W, glass-tube with five articulated specimens fixed to a light blue card, and a loose specimen (that on the left) (x0.9); X, blue card with the specimens on top of it (x2); Y, text written by hand in the reverse of the card (x2); Z, folded piece of paper included in the tube, with the words 'T. caput-serpentis juv. Napoli' written by hand (x1.7); AA-BB, ventral (AA, x11.3) and anteroventral, with ventral valve on top (BB, x12.3) views of the second specimen from the left side in X; CC-EE, dorsal views of the third, fourth and fifth specimens in X (CC x7; DD x7.2; EE x8.3).



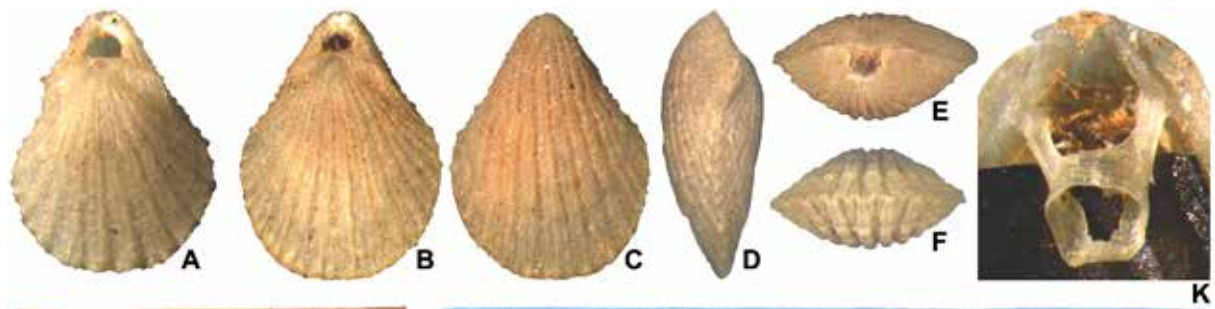
## Planche 81.

**A-F**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-01266 (see also Planche 80V-EE); A, dorsal view of the sixth specimen in X (x7.5); B-F, dorsal (B), ventral (C), lateral (D), posterior (E) and anterior (F), of the loose specimen, that on the left side in X (all x6.7).

**G-S**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-01267; G, photograph of the cardboard to which the glass tube is glued (x0.6); H, four articulated specimens, a ventral valve and a dorsal, probably the counterpart of the preceding, fixed to a light blue card (x2); I, text written by hand in the reverse of the card (x1.5); J, folded piece of paper included in the tube, with the words '2. Terebratulina Caput serpentis Corse, Monterosato' written on it (x1); K-N, detail of the loop of the dorsal valve fixed in the left side of the card (see H), viewed ventrally (K x14), lateroventrally (L x12.7) and posteroventrally (M and N x12); O-S, dorsal views (O and Q) and ventral views (P and R) of the two loose articulated specimens inside the glass tube (O-P x3.7; Q-R x3.2), S, detail of the exterior of the posterior area of the ventral umbo of the specimen illustrated in R, showing ornamentation (x14).

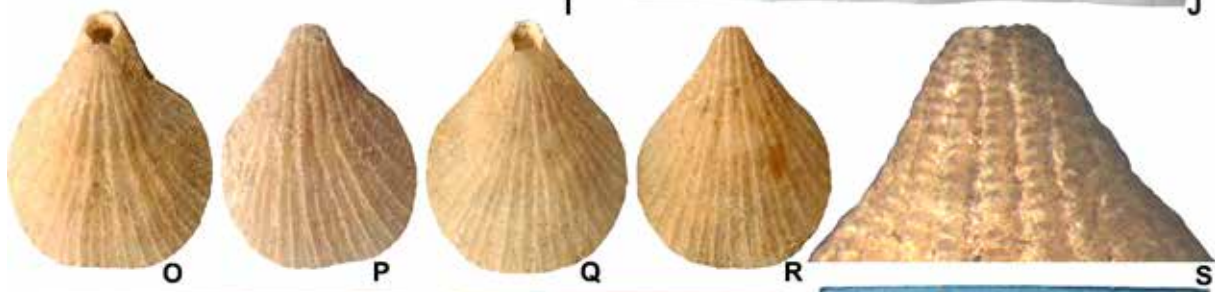
**T-LL**, *Terebratulina retusa* (LINNAEUS, 1758), ML-ZOO-MAL-01268; T, photograph of the cardboard from which a glass-tube have been detached (x0.6); U, glass-tube with two articulated specimens fixed to a light blue card (x0.7); V, card with the two specimens, the first fixed by the ventral valve and the second by the dorsal valve (x1); W, text written by hand in the reverse of the card (x1); X, folded piece of paper included in the tube, with the words 'Terebratulina caput-serpentis Corse' written on it (x0.8); anterodorsal (Y) and anterior, with ventral on top, (Z) views of the articulated specimens fixed to the blue card (both x1.3); AA-LL, illustrations of the two loose articulated specimens included also in the glass tube, AA-FF, dorsal (AA), ventral (BB), lateral (CC), posterior (DD), anterior (EE) and anteroventral, with the ventral valve on top (FF), views of the first specimen (all x1.2); GG-LL, dorsal (GG), ventral (HH), lateral (II), posterior (JJ), anterior (KK) and anterior, with the shell partially open and the ventral valve on top (LL), views of the second loose specimen (GG-KK x1.2; LL x1.5).





2 Terebratulina Caput-Serpentis  
Corse  
Montecosato 1884

2 Terebratulina Caput-Serpentis  
Corse  
Montecosato



Terebratulina  
caput-serpentis  
Corse

2 Terebratulina  
Corse caput-serpentis  
Montecosato 1884



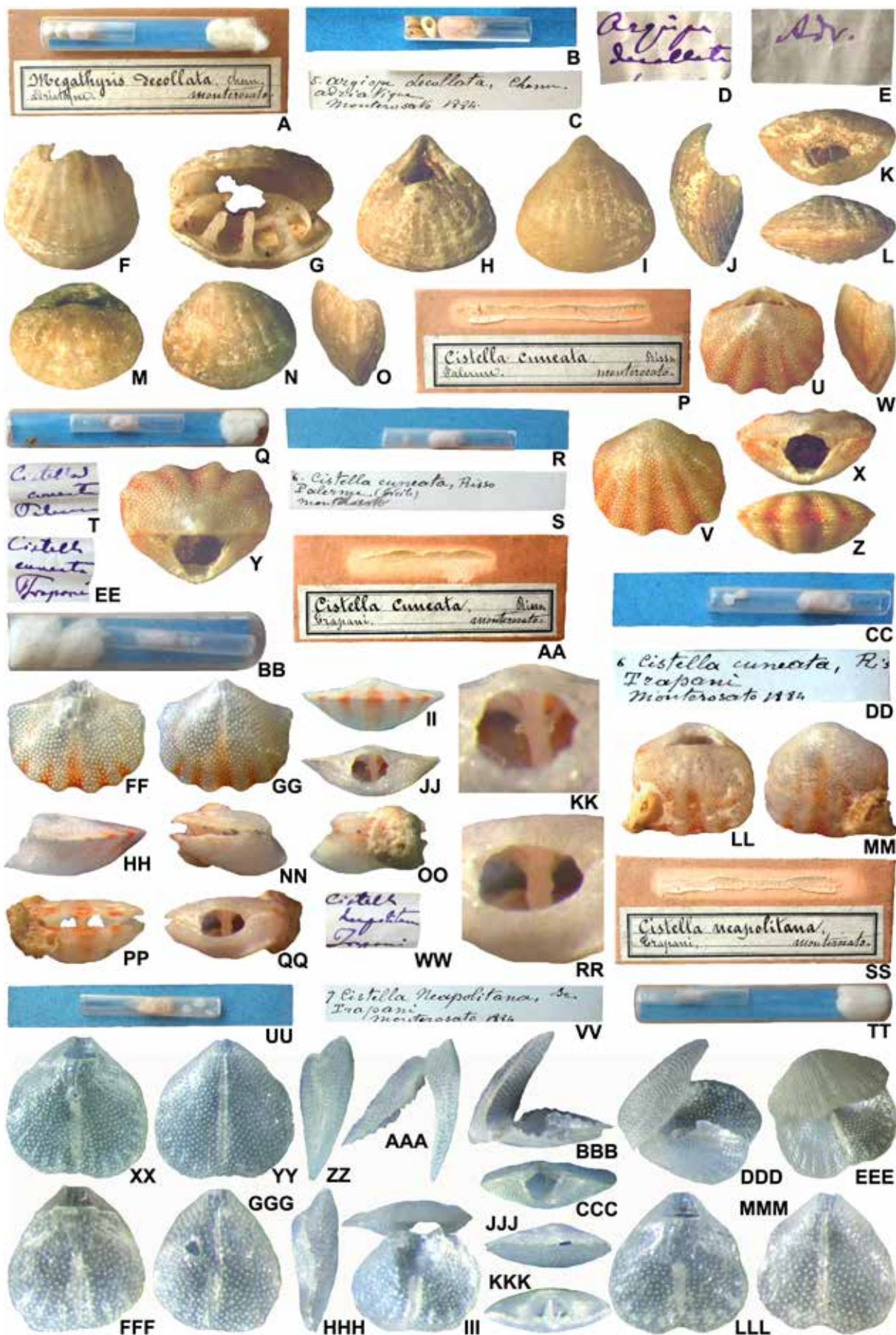
## Planche 82.

**A-O**, *Megathiris detruncata* (GMELIN, 1791), ML-ZOO-MAL-00784; A, photograph of the cardboard and the glass tube that were originally glued (x0.6); B, blue card with the small glass-tube with three small articulated specimens (x0.9); C, text written by hand in the reverse of the card (x0.9); D-E, folded piece of paper with the name '*Argiope decollata*' (D) and 'Adr,' (possibly short for 'Adriatic') in the reverse of the paper (E, both x1); F-G, ventral (F x5.2) and anteroventral (G x6) views of the first specimen; H-L, dorsal (H), ventral (I), lateral (J), posterior (K) and anterior (L) views of the second articulated specimen (all x6); M-O, dorsal (M), ventral (N) and lateral (O) views of the third articulated specimen (all x6.3).

**P-Z**, *Argyrotheca cuneata* (RISSO, 1826), ML-ZOO-MAL-01263; P, photograph of the cardboard from which a glass-tube have been detached (x0.6); Q, glass-tube with a blue card and another very small glass tube with a tiny and loose articulated specimen (x0.8); R, the blue card, the small glass tube with the articulated specimen (x0.9); S, text written by hand in the reverse of the card (x0.9); T, folded piece of paper with the name '*Cistella cuneata* Palermo' written by hand (x 0.6); U-Z, dorsal (U), ventral (V), lateral (W), posterior (X), posterodorsal (Y) and anterior (Z) views of the articulated specimen (U-W x10.5; X, Z x11.5; Y x12).

**AA-RR**, *Argyrotheca cuneata* (RISSO, 1826), ML-ZOO-MAL-01264; AA, photograph of the cardboard from which a glass-tube have been detached (x0.6); BB, glass-tube with a blue card and another small glass tube with two tiny and loose articulated specimens (BB x0.8 and CC x1.3); DD, text written by hand in the reverse of the card (x1.3); EE, folded piece of paper with the name '*Cistella cuneata* Trapani' written by hand (x 0.7); FF-KK, dorsal (FF), ventral (GG), lateral (HH), anterior (II) and posterior (JJ) views of the first articulated specimen (all x13, except HH x 17), KK, detail of JJ (x37); LL-RR, dorsal (LL), ventral (MM), lateral (NN and OO), anterior (PP) and posterior (QQ) views of the second articulated specimen (all x13.7), RR, detail of QQ (x35).

**SS-MMM**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-01265; SS, photograph of the cardboard from which a glass-tube have been detached (x0.6); TT-UU, glass-tube with a blue card and another small glass tube with three small and loose articulated specimens (TT x0.8; UU x0.9); VV, text written by hand in the reverse of the card (x0.9); WW, folded piece of paper with the name '*Cistella neapolitana* Trapani' written by hand (x 0.7); XX-EEE, dorsal (XX), ventral (YY), lateral [with the shell closed (ZZ) or open (AAA)], ventrolateral (with the shell open, BBB and DDD), posterior (CCC) and anteroventral (with the shell open, EEE) views of the first articulated specimen (all x11.7, except DDD x9.3 and EEE x10.7); FFF-KKK, dorsal (FFF), ventral (GGG), lateral (HHH), anteroventral (with the shell open, III), anterior (JJJ) and posterior (KKK) views of the second articulated specimen (all x16, except JJJ and KKK x15); LLL-MMM, dorsal (LLL) and ventral (MMM) views of the third articulated specimen (both x15) (see also Planche 83A-E).



### Planche 83.

**A-E**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-01265 (see also Planche 82SS-MMM); anterior [with the shell closed (A) or open (B)], lateral [with the shell closed (C) or open (D)] and lateroventral (E) views of the third articulated specimen (A, C, E x15; B and D x13.5).

**F-P**, *Joania cordata* (RISSO, 1826), ML-ZOO-MAL-00939; F, photograph of the card-board and the glass tube that were originally glued (x0.6); G, blue card with the small glass-tube (I), with one small articulated specimen (both x1); H, text written by hand in the reverse of the card (x1); J, folded piece of paper with the name '*Cistella cordata neapolitana* Palermo' written by hand (x1); K-P, dorsal (K), ventral (L), lateral (M), anterior (with the shell close, N and slightly open O) and posterior (P) views of the articulated specimen (all x8.3).

**Q-W**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01272; Q, photograph of the card-board to which the glass tube is glued (x0.6); R-T, card with the two specimens, the first fixed by the ventral valve and the second by the dorsal valve (x0.9), [S, anterior view of the card (x1); T, posterior view, slightly tilted (x0.8)]; U, text written by hand in the reverse of the card (x0.9); V, detail of S (x3); W, folded piece of paper with the words '*Megerlia truncata* var. *inflata* Sciacca' written on it and included in the tube (x1.2).

**X-CC**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01273; X, photograph of the card-board to which the glass tube is glued (x0.9); Y-AA, card with the three specimens, fixed by their ventral valves, in dorsal (Y), posterodorsal (Z) and anterior (with the shells slightly open, AA) views (Y-Z x0.9; AA x2); BB, text written by hand in the reverse of the card (x0.9); CC, folded piece of paper included in the tube, with the words '*3 Megerlia truncata* Sciacca Súile Monterrosato' written on it (x0.7).

**DD-NN**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01274; DD, photograph of the card-board from which a glass-tube have been detached (x0.6); EE, glass-tube with a blue card with three specimens (x0.9); FF, card with the three specimens, fixed by their ventral valves, in dorsal view (x0.9); GG, text written by hand in the reverse of the card (x0.9); HH-MM, dorsal (HH, JJ, LL) and ventral (II, KK, MM) views of the three articulated specimens loose inside the tube (all x2); NN, folded piece of paper with the name '*Megerlia truncata* Corse' written by hand (x 1.4).

**OO-SS**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01275 (see also Planche 84A-D); OO, photograph of the card-board from which a glass-tube have been detached (x0.6); PP, glass-tube with a blue card with four specimens (x0.9); QQ, card with the four specimens, fixed by their ventral valves the first three and by the dorsal the last one (x0.9); RR-SS, dorsal view of the two specimens in the left side of the card (x3.7 and x3 respectively).



## Planche 84.

**A-D**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01275 (see also Planche 8300-SS); A-B, dorsal and ventral views of the two specimens in the right side of the card (both x3.5); C, text written by hand in the reverse of the card (x0.9); D, folded piece of paper with the name '*Megerlia truncata monstrosa* Corse' written by hand (x 0.8).

**E-I**, *Megerlia truncata* (LINNAEUS, 1767), ML-ZOO-MAL-01276; E, photograph of the card-board from which a glass-tube have been detached (x0.6); F, glass-tube with a blue card and six articulated specimens loose inside the tube (x0.9); G, card with the six specimens on top of the card (x0.9); H, text written by hand in the reverse of the card (x0.9); I, folded piece of paper with the name '*Megerlia truncata* juv. Trapani' written by hand (x1).

**J-X**, *Hemithiris psittacea* GMELIN, 1791, ML-ZOO-MAL-00345; J, card-board with an articulated specimen fixed by the dorsal valve (x0.8); K-N, ventral (K), lateral (L) and anterior (M, with the shell open and ventral valve on top) views of the specimen fixed in the card-board (all x1.5), N, detail of M (x4.2); O-X, dorsal (O), posterodorsal (P), ventral (Q), lateral (R), posterior (S) and anterior (with the shell close, T and slightly open U) views of the loose articulated specimen inside the plastic bag (all x1.2); V, detail of U (x3); W, detail of P (x8); X, detail of Q (x3).

**Y-FF**, *Lacazella mediterranea* (RISSO, 1826), ML-ZOO-MAL-00338; Y, photograph of the card-board from which a glass-tube have been detached (x0.8); Z-AA, glass-tube (Z, x1.3) with a ventral valve, a dorsal valve and two articulated and open specimens fixed to a black card (AA, x1.9); BB-CC, anterior view of the two articulated specimens with the shell open (BB, x8.3; CC, x6); DD, ventral view of the dorsal valve (8.7); EE, dorsal view of the ventral valve (x, 8.2); FF, piece of paper with the words '*Terebr : dimidiata* Naples –Scachi' written on it by hand (x0.9).

**GG-JJ**, *Terebratulina septentrionalis* ? (COUTHOUY, 1838), ML-ZOO-MAL-00408; GG, photograph of the card-board with two articulated specimens and a dorsal valve fixed to a green card-board (x0.5); HH, dorsal view of the articulated specimen fixed in the left side of the card-board (x2.8); II-JJ, ventral (II, x2.8) and anterior (with the shell open and the ventral valve on top; JJ, x1.6) views of the second articulated specimen.

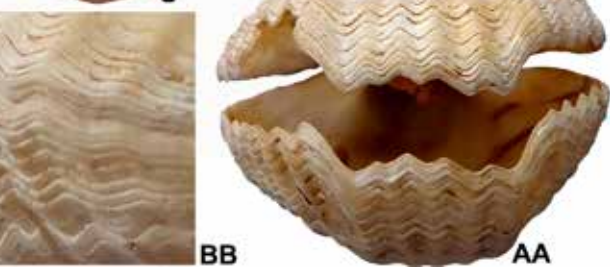
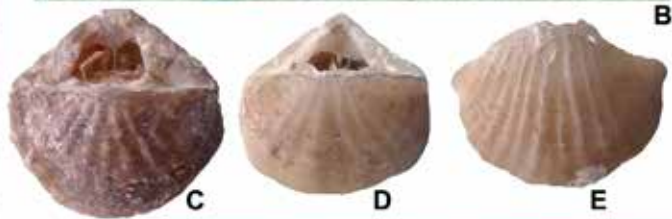
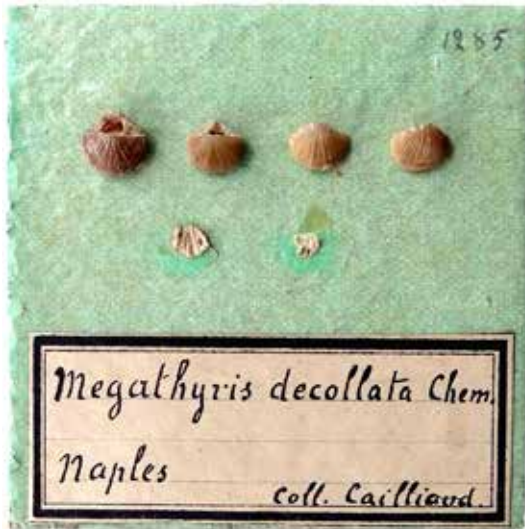


## Planche 85.

**A-H, *Megathiris detruncata*** (GMELIN, 1791), ML-ZOO-MAL-00333; A, card-board with four articulated specimens fixed, the first two by the ventral valve and the second pair by the dorsal, to a light green card-board (x1.2); B, detail of the specimens fixed in the card board with the two disarticulated valves included in the lower row (x2); C-D, dorsal view of the first (C, x4) and second (D, x4.2) articulated specimens fixed in the left side of the card board; E-F, ventral view of the third and fourth articulated specimens (x4.4 and x4.7 respectively); G, dorsal view of the disarticulated ventral valve (5.1); H, ventral view of the disarticulated dorsal valve (5.1).

**I-BB, *Magellania flavescens*** (LAMARCK, 1819), ML-ZOO-MAL-00332; I, an articulated specimen fixed by the ventral valve to the left side of a light green card-board, there are also the glue remains where another three specimens or disarticulated valves seem to have been originally fixed (x0.7); J, text written by hand in the reverse of the card (x0.7); K, dorsal view of the articulated specimen of uncertain assignation (see discussion in text) fixed to the card-board (x1.5); L-O, exterior (L, x1.5), anterior (M, x1.5), interior (N, x1.2) and detail of the umbo (O, x 2.1) of the disarticulated ventral valve; P-U, dorsal (P), ventral (Q), lateral (R), anterior [with the shell close (S) or open (T)] and posterior (U, all x1) views of the first articulated specimen; V-BB, dorsal (V, x1.2), ventral (W, x0.9), lateral (X, x0.8; Y, x1), posterior (Z, x0.9) and anterior [with the shell partially open (AA, x2)] views of the second articulated specimen; BB, detail of Y (x3.2).





## Planche 86.

**A-C**, Lot ML-MAL-07054, *Terebratulina septentrionalis* (COUTHOUY, 1838) ; A-C, photographie du tube en verre (A, x0,7), bouchon en liège (B, x1) et spécimens (C, x1).

**D-H**, Lot ML-MAL-07055, *Terebratulina septentrionalis* (COUTHOUY, 1838) ; D-H, photographie du tube en verre (D, x0,7) et bouchon en liège (E, x1) ; F-G, spécimens (F, x1) et détail du spécimen situé en haut à gauche de F (G, x 4,5) ; H, valves gauche et droite d'un Lamellibranche (x3).

**I-K**, Lot ML-MAL-07056, *Terebratulina septentrionalis* (COUTHOUY, 1838) ; I, photographie du bouchon en liège (x1,3) ; J-K, intérieur (J) et extérieur (K) de la valve dorsale (tous les deux x2,6).

**L-P**, Lot ML-MAL-07057, *Platidia anomioides* (SCACCHI & PHILIPPI, in PHILIPPI, 1844) ; L, photographie du tube en verre (x0,7) ; M-N, photographies des deux morceaux de papiers écrits à la main, introduits également à l'intérieur du tube en verre (M, x0,9 ; N, x0,7) ; O-P, vue dorsale (O, x6,4) et ventrale (P, x6) du spécimen entier.

**Q-S**, Lot ML-MAL-07058, *Stenosarina davidsoni* LOGAN, 1998 (voir aussi la Planche 87, A) ; Q-S, photographie du tube en verre (Q, x0,7), bouchon en liège (R, x1) et une valve d'un Lamellibranche (S, x2).



### **Planche 87.**

**A**, Lot ML-MAL-07058, *Stenosarina davidsoni* LOGAN, 1998 (voir aussi la Planche 86. Q-S) ; A, vue dorsale des spécimens (x2,3).

**B-F**, Lot ML-MAL-07059, *Stenosarina davidsoni* LOGAN, 1998 ; B-F, photographie du tube en verre (B, x0,7), bouchon en liège (C, x1), spécimens (D, x1) et l'intérieur d'une valve de deux Lamellibranches différents (E, x2,4 et F, x3,8).

**G-L**, Lot ML-MAL-07060, *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887) ; G-J, photographie du tube en verre (G, x0,7), bouchon en liège (H, x1,4) et spécimens (I-J, tous x1,4) ; K-L, détail de la valve ventrale située dans le coin supérieur gauche dans I (K, x4,2) et détail de la valve dorsale située au milieu de la rangée inférieure dans I (L, x4,7).

**M-O**, Lot ML-MAL-07061, *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1887) ; M, bouchon en liège (x0,8) ; N-O, vue dorsale (N) et ventrale (O) du spécimen entier (tous les deux x0,9).

**P-R**, Lot ML-MAL-07062, *Fallax dalliniformis* ATKINS, 1960 (voir aussi la Planche 88, A-H); photographie du tube en verre (P, x0,9), bouchon en liège (Q, x0,9) et vue dorsale des spécimens (R, x1,2).



**Planche 88.**

**A-H**, Lot ML-MAL-07062, *Fallax dalliniformis* ATKINS, 1960 (voir aussi la Planche 87, P-R) ; A-B, vue ventrale (A) et antérieure (B, tous x1,3) des spécimens ; C-D, vue antérieure avec la coquille légèrement ouverte (C, x3,5) et légèrement inclinée (D, x2,5) du spécimen situé sur le côté droite de B ; E, vue antérieure avec la coquille légèrement ouverte (x3,3) du spécimen situé au milieu de B ; F, vue antéro-latérale avec la valve dorsale légèrement cassée (x3) du spécimen situé à gauche de B ; G-H, vue latérale du spécimen situé du côté droit de A (G, 1,8) et du milieu (H, x 2,4).

**I-K**, Lot ML-MAL-07063, *Terebratella dorsata* (GMELIN, 1791) ; I, bouchon en liège (x0,8) ; J-K, vue dorsale (J, x2,2) et ventrale (K, x1,8) du spécimen entier.

**L-Q**, Lot ML-MAL-07064, *Magellania flavescens* (LAMARCK, 1819) ; L, photographie du tube en verre (x1) ; M, bouchon en liège (x1,3) ; N-Q, vue dorsale (N), ventrale (O), latérale (P) et antérieure (Q) du spécimen entier (N-P, x1,4 ; Q, x2,4).



## Planche 89.

**A-B**, Lot ML-MAL-07065, *Terebratulina retusa* (LINNÉ, 1758) ; A-B, photographie du bouchon en liège (A, x1,5) et des spécimens (B, x1,3).

**C-K**, Lot ML-MAL-07066, *Fallax dalliniformis* ATKINS, 1960 ; C, photographie du tube en verre (x1) ; D, bouchon en liège (x1.2) ; E-H, vue dorsale (E), ventrale (F), latérale (G) et antérieure (H, avec la coquille légèrement ouverte) des spécimens (tous x0,6) ; I, vue antérieure avec la coquille légèrement ouverte du spécimen situé du côté gauche dans la rangée inférieure de H (x3,5) ; J-K, vue antérieure du spécimen précédent avec la coquille légèrement ouverte montrant la dent de droite et la plaque dentaire (respectivement x3,3 et x8).

**L-P**, Lot ML-MAL-07067, *Hispanirhynchia cornea* (FISCHER, in DAVIDSON, 1886) ; L, bouchon en liège (x0,6) ; M-P, vue dorsale (M), ventrale (N), latérale (O) et antérieure (P) des spécimens entiers (M-N, P, x0,7 ; O, x0,6).

**Q-S**, Lot ML-MAL-07052 (Collection Cailliaud), *Gryphus vitreus* (BORN, 1778) ; Q, carton avec deux spécimens entiers fixés par la valve ventrale (x0,7) ; R, le numéro est écrit sur le coin supérieur droit du carton (x2,3) ; S, valve ventrale libre (x1).

**T-V**, Lot ML-MAL-07053 (Collection Cailliaud), *Megerlia truncata* (LINNÉ, 1767) ; T, carton avec les spécimens (x0,9) ; U-V, photographie des deux morceaux de papiers écrits à la main, introduits également dans le sac plastique (U, x1,5 ; V, x0,9).







# APPENDICES / APPENDIX

## Appendice 1 :

par Jérôme Tréguier & Fernando Álvarez

Récapitulatif, dans l'ordre alphabétique, des espèces de brachiopodes actuels de la collection Œhlert.

<sup>1</sup> La détermination des échantillons et l'actualisation des nomenclatures ont été réalisées par Fernando Álvarez et sont détaillées dans sa contribution.

<sup>2</sup> Transcription exacte de ce qui est noté sur les étiquettes, même si le nom est mal orthographié.

<sup>3</sup> Spécimen Entier. <sup>4</sup> Valve Dorsale. <sup>5</sup> Valve Ventrale.

<sup>6</sup> « La Calle » se nomme aujourd'hui « El Kala », province « El Tarf » en Algérie.

<sup>7</sup> Les numéros de sondages 62 et 71 ne sont pas répertoriés dans les publications de Fischer et Œhlert (1890b, 1891).

<sup>8</sup> Les échantillons ML-ZOO-MAL-00017 et ML-MAL-01283 proviennent probablement de la campagne du *Talisman* car les animaux ont été collectés au Cap Bojador. Les échantillons ML-MAL-01290 et ML-MAL-01295 proviennent probablement des campagnes du *Travailleur* (respectivement 1883 et 1882) car les animaux ont été collectés dans le Golfe de Gascogne.

<sup>9</sup> Sur les étiquettes des échantillons de *Terebratulina septentrionalis* récoltés par l'*Hirondelle* le 3 août 1887 (ML-ZOO-MAL-00043, ML-ZOO-MAL-00044 et ML-ZOO-MAL-00045) il est noté qu'ils proviennent du dragage n°77. Toutefois d'après la date de la récolte, ces brachiopodes proviennent plutôt de la station 162 (Fischer & Œhlert, 1892a).

Nomenclature et pagination dans la contribution d'Alvarez <sup>1</sup>	Nomenclature sur les étiquettes d'origine <sup>2</sup>	Figure dans la contribution d'Alvarez	N° inventaire	SE <sup>3</sup>	VD <sup>4</sup>	VV <sup>5</sup>	Navire	Date	N° du dragage	PROFONDEUR (en m)	Lieu de collecte
Anakinetica cumingi	87	<i>Magasella cumingi</i> Dav.	ML-MAL-01286	1							Nouvelle-Galles du Sud (Australie)
	Argyrotheca cuneata	72	<i>Argiope decollata</i> Pas d'étiquette	ML-ZOO-MAL-00065 ML-ZOO-MAL-00083	3 1	3 3					
<i>Calloria inconspicua</i>			<i>Terebratella rubicunda</i> Soland	ML-ZOO-MAL-00036	2						
	<i>Calloria inconspicua</i>		Pas d'étiquette	ML-ZOO-MAL-00114	2	2	2				
<i>Calloria inconspicua</i>			Pas d'étiquette	PL 41LL-UU	3						
	<i>Calloria inconspicua</i>	84	Pas d'étiquette	ML-ZOO-MAL-00084	1	1	1				
<i>Calloria inconspicua</i>			Pas d'étiquette	ML-ZOO-MAL-00095	2						
	<i>Calloria inconspicua</i>		Pas d'étiquette	ML-ZOO-MAL-00119	1	1	1				
<i>Calloria inconspicua</i>			<i>Terebratella rubicunda</i>	ML-MAL-01296	1	1	1				
	<i>Calloria inconspicua</i>		Pas d'étiquette	ML-ZOO-MAL-00136	1	1	1				
<i>Coptothyris grayi</i>		68	Pas d'étiquette	ML-ZOO-MAL-00111	1	1	1				
	<i>Cryptopora gnoman</i>		<i>Terebratella grayi</i> Davidson	ML-ZOO-MAL-00041	1	1	1				
<i>Dallina floridana</i>		31	<i>Neatretia gnoman</i> Jeffreys sp.	PI. 1M				Etiquette seule			
	<i>Dallina septigera</i>	95	<i>Waldheimia floridensis</i> Pourtales	PI. 50M-V	1				1869		
<i>Dallina septigera</i>			<i>Dallina septigera</i> Lovén	PI. 46A-H	3	2	2	Talisman	1883	65 ou 66	782 ou 640
	<i>Dallina septigera</i>		<i>Dallina septigera</i> Lovén	PI. 46I-R	1	1	1	Talisman	1883	65 ou 66	782 ou 640
<i>Dallina septigera</i>			<i>Dallina septigera</i> Lovén	PI. 47A-G	1	1	1	Talisman	1883	65 ou 66	782 ou 640
	<i>Dallina septigera</i>		<i>Dallina septigera</i> Lovén	PI. 47H-R	1	1	1	Talisman	1883	65 ou 66	782 ou 640
<i>Dallina septigera</i>		91	Pas d'étiquette	ML-ZOO-MAL-00072	1	1	1				
	<i>Dallina septigera</i>		<i>Dallina septigera</i>	ML-MAL-01281	2			Talisman	1883	72 et 73	882 ou 1056-1435
<i>Dallina septigera</i>			<i>Dallina septigera</i> Lovén,	ML-MAL-01295	1			Travailleur ?	1882 ?		
	<i>Dallina septigera</i>		Pas d'étiquette	ML-MAL-01277	2			Talisman	1883	62 ? et 71 ?	640 ou 640-782
<i>Discradisca cumingi</i>		28	<i>Discradisca cumingi</i> Brod. Sp	ML-ZOO-MAL-00068	3	1	1				
	<i>Eucalathis ergastica</i>	55	<i>Eucalathis ergastica</i>	ML-MAL-01291	3	2	3	Talisman	1883	10	717 m
<i>Eucalathis ergastica</i>			<i>Eucalathis ergastica</i> Fisch. et Øhli.	ML-ZOO-MAL-00135	3	2	3				
	<i>Eucalathis tuberala</i>		Pas d'étiquette	ML-ZOO-MAL-00108	5	3	2				
<i>Eucalathis tuberala</i>		53	<i>Eucalathis tuberala</i> Jeffreys	PI. 17EE-MM, 18FF-HH	3	1	1	Travailleur	1881	1 et/ou 39	1226 et/ou 2018
	<i>Eucalathis tuberala</i>		<i>Eucalathis tuberala</i> Jeffreys	PI. 18FF-HH							
<i>Fallax dalliniformis</i>			<i>Dallina septigera</i> Lovén	PI. 22A-F	1	1	1	Talisman	1883	65 ou 66	640
	<i>Fallax dalliniformis</i>		<i>Dallina septigera</i> Lovén	PI. 22G-T	1	1	1	Talisman	1883	62 ? et 71 ?	782 ou 640
<i>Fallax dalliniformis</i>		59	<i>Fallax dalliniformis</i>	ML-ZOO-MAL-00010	1	1	1	Talisman	1883		
	<i>Fallax dalliniformis</i>		<i>Fallax dalliniformis</i>	ML-ZOO-MAL-00017	2			Talisman ? <sup>8</sup>	1883 ?		
<i>Frenulina sanguinolenta</i>			Pas d'étiquette	ML-ZOO-MAL-00116	2						
	<i>Frenulina sanguinolenta</i>	63	<i>Terebratula rubicunda</i> Sol.	ML-ZOO-MAL-00038	1	2	2				
<i>Frenulina sanguinolenta</i>			<i>Terebratella rubicunda</i> Solander	ML-ZOO-MAL-00039	1	2	2				
	<i>Frenulina sanguinolenta</i>		<i>Mühlifeldtia sanguinea</i> Chemnitz	PI. 68Z-AA				(2) Etiquettes seules			

<i>Gryphus vitreus</i>	PI. 8A-F	ML-ZOO-MAL-00025	1	1	1	1	1882	3	512	Golfe de Gascogne
<i>Gryphus vitreus</i>	PI. 8CC	ML-ZOO-MAL-00123	2							
<i>Gryphus vitreus</i>	PI. 8DD-FF	ML-ZOO-MAL-00128	1							
<i>Gryphus vitreus</i>	PI. 8GG-MM	ML-ZOO-MAL-00137	1							Méditerranée
<i>Gryphus vitreus</i>	PI. 8G-P	ML-ZOO-MAL-00026	1							Méditerranée
<i>Gryphus vitreus</i>	PI. 8Q-X	ML-ZOO-MAL-00077	1	1						
<i>Gryphus vitreus</i>	PI. 8Y-BB	ML-ZOO-MAL-00112	1	1						
<i>Gryphus vitreus</i>	PI. 9A-E	ML-ZOO-MAL-00105	1	1						
<i>Gryphus vitreus</i>	PI. 9F-M	ML-MAL-01294	1							
<i>Gryphus vitreus</i>	PI. 9N-R					(5) Etiquettes seules				Plusieurs
<i>Hemithiris woodwardi</i>	PI. 3A-G	ML-MAL-01299	1	1						Gotto
<i>Hispanihrynchia cornea</i>	PI. 1N-W	ML-ZOO-MAL-00053	1	1	Talisman	1883	72	882		Sahara
<i>Hispanihrynchia cornea</i>	PI. 2A-F	ML-ZOO-MAL-00046	1	1	Talisman	1883	76	1435		"Soudan" (Sahara)
<i>Hispanihrynchia cornea</i>	PI. 2G-T	ML-ZOO-MAL-00133	2							
<i>Hispanihrynchia cornea</i>	PI. 2U-Z	ML-ZOO-MAL-00091	2	1						
<i>Joania cordata</i>	PI. 35H-S	ML-ZOO-MAL-00061	1	1						
<i>Joania cordata</i>	PI. 35T-FF, 36A-S	ML-ZOO-MAL-00064	3	2	2					
<i>Joania cordata</i>	PI. 36T-Y	ML-ZOO-MAL-00030	1	2						Méditerranée
<i>Joania cordata</i>	PI. 12J-K	ML-ZOO-MAL-00012	1							
<i>Joania cordata</i>	PI. 36Z					Etiquette seule				La Calle (Algérie)
<i>Kraussina rubra</i>	PI. 58A-J	ML-ZOO-MAL-00079	1	1						Sud de l'Afrique
<i>Kraussina rubra</i>	PI. 58K-S	ML-ZOO-MAL-00085	1	1						
<i>Kraussina rubra</i>	PI. 58T-BB	ML-ZOO-MAL-00130	1	1						
<i>Kraussina rubra</i>	PI. 58CC-FF					(4) Etiquettes seules				Plusieurs
<i>Lacazella mediterranea</i>	PI. 4F-H	ML-ZOO-MAL-00032	2							La Calle (Algérie) <sup>6</sup>
<i>Lacazella mediterranea</i>	PI. 4I-BB, 5A-J, N	ML-ZOO-MAL-00029	20	1	3					Méditerranée (probablement la barrière de corail, La Calle, Algérie)
<i>Lacazella mediterranea</i>	PI. 5Y-CC, 6A-G	ML-ZOO-MAL-00102	4	2						
<i>Lacazella mediterranea</i>	PI. 6H-DD, 7A-P	ML-ZOO-MAL-00115	10	1						
<i>Lacazella mediterranea</i>	PI. 7Q-FF	ML-MAL-01288	2	1	1					Méditerranée
<i>Lacazella mediterranea</i>	PI. 5O-X	ML-ZOO-MAL-00060	1	3	1					La Calle (Algérie) <sup>6</sup>
<i>Lacazella mediterranea</i>	PI. 7GG-JJ					(4) Etiquettes seules				Plusieurs
<i>Laqueus rubellus</i>	PI. 25A-J	ML-MAL-01298	2	2						Mer du Japon ?
<i>Leptothyrella incerta</i>	PI. 39S-EE	ML-ZOO-MAL-00023	1	1	Talisman	1883	144	2295		Au nord de Sao Miguel (Açores)
<i>Leptothyrella incerta</i>	PI. 39R					Etiquette seule				Açores
<i>Lingula</i>	PI. 1A-C	ML-ZOO-MAL-00051	1	1						Kampot (Cochinchine)
<i>Macandrewia cranium</i>	PI. 19A-N	ML-ZOO-MAL-00002	3		Talisman	1883	65 ou 66	782 ou 640		Cap Bojador
<i>Macandrewia cranium</i>	PI. 19O-U	ML-ZOO-MAL-00014	2		Travailleur	1880 et/ou 1881	10 et/ou 40	392-1960		Côtes d'Espagne
<i>Macandrewia cranium</i>	PI. 19V-Z	ML-ZOO-MAL-00011	1	1	Travailleur	1882	3	512		Golfe de Gascogne
<i>Macandrewia cranium</i>	PI. 20A-H	ML-ZOO-MAL-00093	1	1						
<i>Macandrewia cranium</i>	PI. 20I-O	ML-ZOO-MAL-00099	1	2	2					
<i>Macandrewia cranium</i>	PI. 20P-Y	ML-ZOO-MAL-00106	2							



<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 62U-AA	ML-ZOO-MAL-00092		5	1						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 63A-M	ML-ZOO-MAL-00073	3		1						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 63N-V	ML-ZOO-MAL-00076	4								
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 63W-KK	ML-MAL-01293	2	3	3						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 64A-V	ML-ZOO-MAL-00075	1	1	1						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 65A-Q	ML-ZOO-MAL-00080	2								
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 66A-S	ML-ZOO-MAL-00107	2	3	3	Talisman	1883	23 ou 24	120	Cap Blanc (Maroc)	
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 66T-EE	ML-ZOO-MAL-00113	2	2	1						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 67A-N	ML-ZOO-MAL-00125	2	2	2						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 67O-BB	ML-ZOO-MAL-00127	2	3	1						
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 68A-F	ML-ZOO-MAL-00138	4								
<i>Megerlia truncata</i>	Pas d'étiquette	Pl. 68G-K	ML-ZOO-MAL-00139	3								
<i>Megerlia truncata</i>	<i>Mühlfeildtia echinata</i> Fisch & Cehl	Pl. 68V-Y										Plusieurs
<i>Megerlia truncata</i>	<i>Mühlfeildtia truncata</i> Linné sp	Pl. 68L-U										Plusieurs
<i>Neothyris lenticularis</i>	<i>Terebratella</i>	Pl. 40P-R	ML-ZOO-MAL-00040			1						Iles Stewart (Nouvelle-Zélande)
<i>Notosaria nigricans</i>	<i>Rhynchonella (Hemthyris) cornea</i> Fisch.	Pl. 3H-P	ML-ZOO-MAL-00047	1			Talisman	1883	75	822	Côtes du "Soudan" ? Plutôt Nouvelle Zélande	
<i>Notosaria nigricans</i>	Pas d'étiquette	Pl. 3Q-Y	ML-ZOO-MAL-00088		1	1					Probablement Iles Chatham (Nouvelle-Zélande)	
<i>Notosaria nigricans</i>	<i>Rh. Nigricans</i> Sowerby	Pl. 4A-E	ML-MAL-01285		1	1					Nouvelle-Zélande	
<i>Novocrania anomala</i>	<i>Crania anomala</i> Müller sp.	Pl. 1L-L	ML-ZOO-MAL-00104		2		Travailleur	1882	22	70	Côte du Portugal	
<i>Pictothyris picta</i>	<i>Laqueus pictus</i> Chemnitz	Pl. 26P-BB	ML-MAL-01287	1							Japon	
<i>Platidia anomioidea</i>	<i>Plat. anomioidea</i>	Pl. 37A-I	ML-ZOO-MAL-00009			2	Talisman	1883	62 ?	640-782	Cap Bojador	
<i>Platidia anomioidea</i>	Pas d'étiquette	Pl. 37J-DD	ML-ZOO-MAL-00054		1	1						
<i>Platidia anomioidea</i>	Pas d'étiquette	Pl. 39A-N	ML-ZOO-MAL-00058		2	2						
<i>Platidia anomioidea</i>	<i>Platidia anomioidea</i>	Pl. 39O-Q									Plusieurs	
<i>Platidia davidsoni</i>	Pas d'étiquette	Pl. 38A-GG	ML-ZOO-MAL-00066	2	1	1						
<i>Stenosarina davidsoni</i>	<i>Liothyrina sphenoidaea</i> Philippi	Pl. 9S-EE, 10A	ML-ZOO-MAL-00013	1	1	1	Travailleur	1882	3	512	Nord de l'Espagne	
<i>Stenosarina davidsoni</i>	<i>Liothyrina sphenoidaea</i> Philippi	Pl. 10B-L	ML-ZOO-MAL-00015	1			Travailleur	1882	3	512	Nord de l'Espagne	
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 10M-S	ML-ZOO-MAL-00086	1	1	1						
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 10T-X	ML-ZOO-MAL-00087		1	1						
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 10Y	ML-ZOO-MAL-00094		2	2						
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 10Z	ML-ZOO-MAL-00124		1	1						
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 11A-H	ML-ZOO-MAL-00134		1	1						
<i>Stenosarina davidsoni</i>	Pas d'étiquette	Pl. 11I-K	ML-ZOO-MAL-00140		1	1						
<i>Stenosarina davidsoni</i>	<i>L. sphenoidaea</i>	Pl. 11L-N	ML-MAL-01279			1	Talisman	1883	71 ?		Sahara (côte du "Soudan")	
<i>Stenosarina davidsoni</i>	<i>Liothyrina sphenoidaea</i> Philippi	Pl. 11O-P	ML-MAL-01280		1	1	Travailleur	1882	32	440	Sud de l'Espagne	
<i>Stenosarina davidsoni</i>	<i>Liothyrina sphenoidaea</i> Philippi	Pl. 11Q-X	ML-MAL-01290			1	Travailleur ?	1882 ?			Golfe de Gascogne	
<i>Stenosarina davidsoni</i>	<i>Liothyrina sphenoidaea</i> Philippi sp	Pl. 12A-D									Plusieurs	
<i>Terebratella coreanica</i>	<i>Terebratella coreanica</i> Adams & Reeve	Pl. 27A-O	ML-ZOO-MAL-00042	1							Japon	
<i>Terebratella dorsata</i>	<i>Terebratella dorsata</i> Gmelin	Pl. 40W-X									Cap Horn	
<i>Terebratella sanguinea</i>	<i>Terebratella cruenta</i> (Dilwyn)	Pl. 40S-V									Iles Stewart	



<i>Terebratella sanguinea</i>		<i>Terebratella cruenta</i> Dillwyn	Pl. 40A-J	ML-ZOO-MAL-00037		1	1				Détroit de Foveaux (Nouvelle-Zélande)	
<i>Terebratella sanguinea</i>	81	<i>Terebratella</i>	Pl. 40K-O	ML-ZOO-MAL-00040		1	1				Iles Stewart (Nouvelle-Zélande)	
<i>Terebratella sanguinea</i>		<i>Terebratella</i>	Pl. 40Y					Etiquette seule			Iles Stewart	
<i>Terebratulina retusa</i>		<i>Terebratulina caput-serpentis</i> Lin.	Pl. 12E-H	ML-ZOO-MAL-00016			1				Manche	
<i>Terebratulina retusa</i>		<i>Terebratulina caput-serpentis</i> Lin.	Pl. 12I-DD, 13A-II	ML-ZOO-MAL-00012	9						Roscoff	
<i>Terebratulina retusa</i>		Pas d'étiquette	Pl. 14AA-II	ML-ZOO-MAL-00103		1	1					
<i>Terebratulina retusa</i>		Pas d'étiquette	Pl. 14A-G	ML-ZOO-MAL-00050	1			Talisman	1883			
<i>Terebratulina retusa</i>	47	Pas d'étiquette	Pl. 14H-L	ML-ZOO-MAL-00081	5							
<i>Terebratulina retusa</i>		Pas d'étiquette	Pl. 14M-V	ML-ZOO-MAL-00100	2							
<i>Terebratulina retusa</i>		Pas d'étiquette	Pl. 14W-Z	ML-ZOO-MAL-00132	1	1	1					
<i>Terebratulina retusa</i>		Pas d'étiquette	Pl. 15A-C	ML-MAL-01292	4							
<i>Terebratulina retusa</i>		<i>Terebratulina caput-serpentis</i> Linné sp	Pl. 17A-C					(3) Etiquettes seules			Plusieurs	
<i>Terebratulina septentrionalis</i>		Pas d'étiquette	Pl. 15D-G	ML-ZOO-MAL-00118	1		1					
<i>Terebratulina septentrionalis</i>		<i>Terebratulina septentrionalis</i> Couthouy	Pl. 15H-I, L-T	ML-ZOO-MAL-00044	1	3	3	Hirondelle	1887	77 ? <sup>p</sup>	155	Terre Neuve
<i>Terebratulina septentrionalis</i>		<i>Terebratulina caput-serpentis</i> L., var <i>septentrionalis</i>	Pl. 15U-GG	ML-ZOO-MAL-00049	1	1	1					
<i>Terebratulina septentrionalis</i>	50	<i>Terebratulina septentrionalis</i> Couthouy	Pl. 16A-W	ML-ZOO-MAL-00043	2			Hirondelle	1887	77 ? <sup>p</sup>	155	Terre Neuve
<i>Terebratulina septentrionalis</i>		Pas d'étiquette	Pl. 16GG-MM	ML-ZOO-MAL-00120		1	1					
<i>Terebratulina septentrionalis</i>		<i>Terebratulina septentrionalis</i> Couthouy	Pl. 16X-FF	ML-ZOO-MAL-00045		1	1	Hirondelle	1887	77 ? <sup>p</sup>	155	Terre Neuve
<i>Terebratulina septentrionalis</i>		<i>Terebratulina septentrionalis</i> Couth.	Pl. 17D					Etiquette seule			Terre Neuve	
Terebratellidae genre et espèce indéterminés		Pas d'étiquette	Pl. 51A-O, 52A-S	ML-ZOO-MAL-00089		4	4					
Terebratellidae genre et espèce indéterminés		Pas d'étiquette	Pl. 53A-U, 54A-S	ML-ZOO-MAL-00090		3	3					
Terebratellidae genre et espèce indéterminés	96		Pl. 55A-R	ML-MAL-01284	8							Iles Stewart (Nouvelle-Zélande)
Terebratellidae genre et espèce indéterminés		Pas d'étiquette	Pl. 55S-CC	ML-ZOO-MAL-00098		1	1					
Terebratellidae genre et espèce indéterminés		Pas d'étiquette	Pl. 56A-Y	ML-ZOO-MAL-00101		2	2					
Terebratellidae genre et espèce indéterminés		Pas d'étiquette	Pl. 57A-SS	ML-ZOO-MAL-00122		6	6					

## **Appendice 2 :**

par Fernando Álvarez

Récapitulatif, dans l'ordre alphabétique, des espèces de brachiopodes actuels de la collection Monterosato et Cailliaud.

<sup>1</sup> La détermination des échantillons et l'actualisation des nomenclatures ont été réalisées par Fernando Álvarez et sont détaillées dans sa contribution.

<sup>2</sup> Transcription exacte de ce qui est noté sur les étiquettes, même si le nom est mal orthographié.

<sup>3</sup> Voir sa contribution pages 111 à 122.

<sup>4</sup> Spécimen Entier. <sup>5</sup> Valve Dorsale. <sup>6</sup> Valve Ventrale.

Nomenclature et pagination dans cette contribution <sup>1</sup>		Identifiées par de Monterosato <sup>2</sup>	Figure dans cette contribution <sup>3</sup>	N° inventaire	SE <sup>4</sup>	VD <sup>5</sup>	VV <sup>6</sup>	Lieu de collecte
<i>Argytotheca cuneata</i>	115	<i>Cistella cuneata</i>	Pl. 82P-Z	ML-ZOO-MAL-01263	1			Palermo
<i>Argytotheca cuneata</i>		<i>Cistella cuneata</i>	Pl. 82AA-RR	ML-ZOO-MAL-01264	2			Trapani
<i>Gryphus vitreus</i>	112	<i>Terebratula vitrea</i>	Pl. 80G-J	ML-ZOO-MAL-01269			1	Corse
<i>Gryphus vitreus</i>		<i>Terebratula vitrea</i>	Pl. 80K-P	ML-ZOO-MAL-01270	2			Sardaigne
<i>Gryphus vitreus</i>		<i>Terebratula affinis</i>	Pl. 80Q-U	ML-ZOO-MAL-01271	3	1	1	Lipari
<i>Joania cordata</i>	115	<i>Cistella neapolitana</i>	Pl. 82SS-MMM; Pl. 83A-E	ML-ZOO-MAL-01265	3			Trapani
<i>Joania cordata</i>		<i>Cistella neapolitana</i>	Pl. 83F-P	ML-ZOO-MAL-00939	1			Palermo
<i>Lacazella mediterranea</i>	111	<i>Thecidium mediterraneum</i>	Pl. 80A-F	ML-ZOO-MAL-00885			1	Skikda (Algeria)
<i>Megathiris detruncata</i>	114	<i>Argiope decollata</i>	Pl. 82A-O	ML-ZOO-MAL-00784	3			Adriatique
<i>Megerlia truncata</i>	116	<i>Megerlia truncata</i> var. <i>inflata</i>	Pl. 83Q-W	ML-ZOO-MAL-01272	2			Sciaccia (Sicile)
<i>Megerlia truncata</i>		<i>Megerlia truncata</i> var. <i>inflata</i>	Pl. 83X-CC	ML-ZOO-MAL-01273	3			Sciaccia (Sicile)
<i>Megerlia truncata</i>		<i>Megerlia truncata</i>	Pl. 83DD-NN	ML-ZOO-MAL-01274	3			Corse
<i>Megerlia truncata</i>		<i>Megerlia truncata</i>	Pl. 84E-I	ML-ZOO-MAL-01276	6			Trapani
<i>Megerlia truncata</i>		<i>Megerlia truncata</i> var. <i>monstruosa</i>	Pl. 83OO-SS; Pl. 84A-D	ML-ZOO-MAL-01275	4			Corse
<i>Terebratulina retusa</i>	113	<i>Terebratulina Caput-Serpentis</i>	Pl. 80V-EE; Pl. 81A-F	ML-ZOO-MAL-01266	6			Naples (Italia)
<i>Terebratulina retusa</i>		<i>Terebratulina Caput-Serpentis</i>	Pl. 81G-S	ML-ZOO-MAL-01267	4	1	1	Corse
<i>Terebratulina retusa</i>		<i>Terebratulina Caput-Serpentis</i>	Pl. 81T-LL	ML-ZOO-MAL-01268	2			Corse
<b>Total number of specimens in the Collection of the Marquis de Monterosato</b>					<b>45</b>	<b>2</b>	<b>4</b>	
<i>Hemithiris psittacea</i>	118	<i>Rhynchonella psittacea</i>	Pl. 84J-X	ML-ZOO-MAL-00345	2			Terre Neuve
<i>Lacazella mediterranea</i>	119	<i>Thecidia mediterranea</i>	Pl. 84Y-FF	ML-ZOO-MAL-00338	2	1	1	Côtes de Nice
<i>Magellania flavescens</i>	121	<i>Terebratula flavescens</i>	Pl. 85I-BB	ML-ZOO-MAL-00332	3		1	Océanie
<i>Megathiris detruncata</i>	120	<i>Megathiris decollata</i>	Pl. 85A-H	ML-ZOO-MAL-00333	4	1	1	Naples
<i>Terebratulina septentrionalis</i> ?	120	<i>Terebratulina Caput-Serpentis</i>	Pl. 84GG-JJ	ML-ZOO-MAL-00408	2	1		Bergen, Norvège
<b>Total number of specimens in the Collection of Frédéric Cailliaud</b>					<b>13</b>	<b>3</b>	<b>3</b>	

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Spécimens de *Megerlia truncata* (Linnaeus, 1767) incrustés à un bloc de calcaire trouvé dans la Mer Cantabrique (Nord de Gijón, Espagne). La largeur maximale de brachiopodes est approximativement de 1.5 cm. La photographie est avec l'aimable autorisation de German Flor (Université d'Oviedo, Espagne). Cette photographie a été initialement publiée par Álvarez et Emig, 2005 ; Fauna Ibérica.



Fond rocheux dans le Bathyal supérieur (255 m de profondeur) au large de l'île de Porquerolles (Provence, France, avec des *Novocrania anomala*, des *Megathiris detruncata* et de nombreuses *Megerlia truncata*, dont certaines présentent la forme *monstruosa* avec déformation de la coquille en fonction du substrat. Ces espèces se trouvent aussi sur des branches du scléactiniaire *Dendrophyllia cornigera* ; cliché Christian C. Emig.



**Fernando Álvarez** est né en 1950 à Gijón (Asturies, Espagne). Il a été reçu en « licence de sciences géologiques » en juin 1974, a soutenu sa thèse de licence en 1976 et sa thèse de doctorat en 1987 à l'université d'Oviedo. Entre 1974 et 1988, Fernando Álvarez a occupé successivement les postes de « Profesor Ayudante », « Profesor Colaborador » et « Profesor Titular Interino » de Paléontologie à l'université d'Oviedo et en 1988 on lui a attribué le poste de « Profesor Titular » dans la même université et « Profesor Honorario » en 2011. Son intérêt de recherche était initialement sur les brachiopodes Athyrides du Paléozoïque (Ordovicien) au Mésozoïque (Jurassique), leur morphologie (terminologie standardisée), la structure de la coquille, la paléo-écologie, la distribution, la classification, l'évolution et la phylogénie. En 1988, il a été choisi par Alwyn Williams pour écrire l'ordre des Athyridida dans la Part H (Brachiopoda), édition révisée du « Treatise of invertebrate

Paleontology », publié dans les volumes 4 (2002) et 6 (2007). Pour mieux comprendre les brachiopodes fossiles, leur morphologie et leur variabilité, il a aussi étudié les brachiopodes actuels, particulièrement ceux des côtes Ibéro-baléares et des côtes et des archipels de la Macaronésie et en mer Bellingshausen (Péninsule Antarctique occidentale). Il s'est récemment associé à Aleksandra Bitner et Christian C. Emig, comme co-auteur de la base de données Brachiopoda Database ([http://paleopolis.rediris.es/brachiopoda\\_database/](http://paleopolis.rediris.es/brachiopoda_database/)). Il a écrit plus de 140 publications et monographies et a été éditeur scientifique de l'Association Paléontologique de 2010 jusqu'à 2015.

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**Christian C. Emig** est océanographe biologiste, Directeur de Recherche Honoraire du CNRS. Après une thèse de Doctorat de 3e cycle et une thèse de Doctorat d'Etat es-Sciences sur les Phoronida, un volet Brachiopoda, ces deux groupes appartenant au Lophophorata, a été ajouté à ses thématiques de recherche. Avec 350 publications, livres, films, DVD, ses travaux biologiques ont principalement été consacrés aux questions d'évolution et de phylogénie, de reproduction, ainsi que d'écologie, notamment de bionomie benthique méditerranéenne pour les espèces des deux groupes zoologiques. Une attention particulière a été portée dans la transposition des données de l'actuel au fossile. Cet ensemble de recherche a conduit à de nombreuses collaborations dans divers pays, ainsi que des missions en plongée et de dragages dans presque tous les océans. L'arrivée d'Internet a permis de créer divers sites sur la Toile avec des bases de données

régulièrement mises à jour ; parmi les quelques 15 sites, il convient d'en citer deux : **Brachiopoda Database** (avec deux co-auteurs : Fernando Álvarez et Maria Aleksandra Bitner) et **Phoronida Database**. Dans les activités éditoriales et journalistiques, commencées dans les années 1970, il y a, depuis 2002, le journal scientifique international *Carnets de Géologie* en tant que co-éditeur.

*Note : l'étude généalogique des ascendants de Daniel Victor Œhlert, faite par C. C. Emig a révélé que les deux partagent au moins 24 ancêtres, tous originaires d'Ostheim et villages environnants (Haut-Rhin) (Emig, 2013b ; site [WEB Benthos](http://WEB Benthos), 2017).*

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