

Dinard Herbarium: History of a Marine Station¹

Denis LAMY^{a}, Marine ROBUCHON^{a, b}, Lionel KERVRAN^c,
Bruno DENNETIERE^a, Eric FEUNTEUN^d & Line LE GALL^a*

^a*Institut de Systématique, Évolution, Biodiversité, ISYEB – UMR 7205 – CNRS,
MNHN, UPMC, EPHE, Muséum national d’Histoire naturelle, Sorbonne
Universités, 57 rue Cuvier, CP 39, 75231 Paris Cedex 05, France*

^b*Current address: UMR Biologie des Organismes et Ecosystèmes Aquatiques,
BOREA – Sorbonne Universités, UPMC Univ. Paris 06, UA, UCBN, MNHN,
CNRS 7208, IRD 207, Muséum national d’Histoire naturelle,
CP 26, 43 rue Cuvier, 75005, Paris, France*

^c*Direction des collections, Muséum national d’Histoire naturelle,
CP 39, 57 rue Cuvier, 75231 Paris Cedex 05, France*

^d*Station Marine de Dinard, UMR BOREA, & CRESCO (Centre de Recherche
et d’Enseignement sur les Systèmes Côtiers), Muséum national d’Histoire
naturelle, 38 rue du Port Blanc, 35800 Dinard, France*

Abstract – The history of the marine station of the Muséum national d’Histoire naturelle, from its creation on the island of Tatihou, off Saint-Vaast-la-Hougue, to its present existence as the Research and Education Center on coastal systems in Dinard, through the facilities in Saint-Servan, sheds a new light on the constitution of the algae herbarium of Dinard. The content of this herbarium reveals a representation of the history of people and concepts in over 200 years of phycological researches in this area of Normano Breton Gulf. Such an understanding now makes possible to consider interpreting data in the frame of temporal changes in algal communities.

**Dinard Herbarium / Marine Station / Muséum national d’Histoire naturelle / Tatihou /
Saint-Servan / Dinard / History**

As part of our research on the operation of the algae herbarium of Dinard, often called the Lami Herbarium – we will see why later – we considered that it was important to outline the history of the marine station of the Muséum national d’Histoire naturelle. Tracing this history will showcase the individuals who put together this collection and highlight its content, which varied depending on harvest locations and periods.

The history of the marine station of the Muséum national d’Histoire naturelle is one of an itinerant station, not in the sense meant by Henri de Lacaze-Duthiers of a sort of convertible trailer that could be moved to the most appropriate

1. Translated from the French by Miss Fanja Andriamialisoa. For the French version, please see
[doi/10.7872/crya/v37.iss1.2016.S1](https://doi.org/10.7872/crya/v37.iss1.2016.S1)

* Corresponding author: lamy@mnhn.fr

region but because it was successively located in three sites. The station was the initiative of the Assembly of Professors who wished to have an institution with its own facility. It soon faced administrative, notably financial, challenges. Before the site in Dinard was built, the station was housed in temporary facilities such as the lazaretto of Tatihou or the arsenal of Saint-Servan.

BEGINNINGS

Some time before the 1840s, Gustave Thuret² got acquainted with the study of algae along the coastlines of Normandy, under the guidance of A. de Villers, an amateur botanist and a musician. He collected in Arromanches, Cherbourg, Saint-Vaast-la-Hougue, Barfleur etc. A. de Villers introduced him to Joseph Decaisne³ who helped them identify the collections. From 1852 to 1857, settled in Cherbourg with his friend Edouard Bornet⁴, Thuret was particularly fond of Saint-Vaast-la-Hougue, a place he would recommend to the Swedish phycologist Johan Erhart Areschoug⁵ (1812-1887). They maintained close ties with Auguste LeJolis⁶ and Norman botanists. Thuret and Bornet favored microscopic study and worked on fresh material, regularly collecting on these coastlines. Their collections helped understand the reproduction of Floridae. The creation of the Museum station in Tatihou would “dry up” this “algology school of the Cotentin” (Frémy, 1922).

This renewed need to observe fresh material was shared by botanists and zoologists. Therefore, Alphonse Milne-Edwards⁷ chose the region of Saint-Vaast-la-Hougue⁸ as a field site in the year 1872-1873.

TATIHOU

In 1881, Edmond Perrier⁹ suggested to the Assembly of Professors at the Muséum national d'Histoire naturelle the creation of a seaside laboratory of zoology. The first reason was not to be outdone by the Paris Faculty of Sciences¹⁰ and the second to be able to supply living material for the study of animals. Both arguments, one institutional and one scientific¹¹, were intertwined. Perrier (Perrier,

2. Gustave Thuret (1817-1875), an attaché to the French Embassy in Constantinople (1839-1841), funded his own research. His musical interest brought him into contact with A. de Villers about whom we know very little.

3. Joseph Decaisne (1807-1882) was at the time an *aide-naturaliste* to Adrien de Jussieu in the Chair of Rural Botany at the Museum. He held the Chair of Culture in 1850.

4. Edouard Bornet (1828-1911), a medical doctor and an excellent draughtsman, worked with G. Thuret from 1852 to 1875.

5. Areschoug spent several months in Saint-Vaast-la-Hougue in 1858 (Hariot, 1912).

6. Auguste LeJolis (1823-1904), a judge at the Cherbourg Commercial Court until 1888 was one of the founders of the Cherbourg Society of Natural Sciences and Mathematics.

7. Alphonse Milne-Edwards (1835-1900) was an *aide-naturaliste* in the Chair of Zoology (Mammals and Birds), a chair that he held in 1879, Director of the Museum from 1892 to 1900.

8. EPHE (Ecole Pratique des Hautes Etudes) report for the year 1873-1874.

9. Edmond Perrier (1844-1921), holder of the Chair of Mollusks, Worms, and Zoophytes, became the professor of the Chair of Compared Anatomy in 1903, Director of the Museum from 1900 to 1919.

10. Henri de Lacaze-Duthiers (1821-1901), holder of the Chair of Zoology, Compared Anatomy and Physiology at the Paris Faculty of Sciences, created the station of Roscoff in 1872 and the station of Banyuls-sur-Mer in 1882.

11. Perrier participated as a student of the Roscoff Station in an expedition on the *Talisman* in 1872.

1879) considered that the teaching of natural sciences required *in situ* demonstration. Therefore, a major institution such as the Museum had to have a maritime laboratory to meet requirements and complete the training of naturalists. Based on the report of an *ad hoc* commission, Perrier¹² suggested establishing this station in the Channel, recalling that the fauna of this sea supplied important material to zoologists. Saint-Vaast-la-Hougue, being close to Paris and Cherbourg, from where the active assistance of the Navy was expected, seemed to be the most appropriate place, particularly since the inauguration in 1858 of the Paris-Cherbourg line by the “Compagnie des chemins de fer de l’Ouest”. While Philippe Van Tieghem¹³ was a member of this commission, the report clearly leaned towards the demonstration of marine animals. Furthermore, there was no phycologist at the Museum and Edouard Bornet did not conceive the cohabitation of botany and zoology. At its session of December 6, 1881, the Assembly of Professors unanimously approved this report¹⁴. Therefore “located in a region were primitive, primary and secondary lands were mixed and successively cut by the coastline, the laboratory of Saint-Vaast-la-Hougue will have access to a more diverse flora and fauna than elsewhere” (Perrier, 1888).

The contribution of the laboratory would not be limited to fundamental research and applications were developed such as oyster and fish farming, competing with the research carried out in Concarneau¹⁵.

However, the decision of the Assembly of Professors was not immediately enforced, far from it. Perrier struggled seven years with the public authorities for the laboratory to be created. It was then decided that the island of Tatihou, off the coast of Saint-Vaast-la-Hougue, which benefited from eight hours of tide and had a disused lazaretto would be the ideal site: it was near the sea, far from a big city or an estuary, a guarantee of sea water purity (Figs 1-6).

Numerous and very expensive works (Perrier¹⁶: 292,601.89 Francs) were needed to transform the lazaretto buildings into freshwater and seawater aquariums, laboratories, canteen, administrative services, libraries. While 17 students were able to work there between July and September 1888, works were only finalized in July 1896 thanks to significant funding allocated by the French government and the support of the Museum laboratories¹⁷. Given the important amounts devoted to Tatihou while the Museum was not in its best financial state, we can assume that this was the result of continuous pressure by Perrier and Alphonse Milne-Edwards on public authorities.

Malard (1895, 1905) gave a thorough description of the station, which had “buildings scattered in vast park-like prairies, each pavilion customized,” (Malard, 1905).

Three ships were assigned to the station: *La Favorite*, the *Tic-Tac*, which was equipped for dredging and the *Comatula*. The *Pourquoi Pas?* of the Commandant Charcot would complete the fleet in 1910.

12. Rapport sur le laboratoire maritime du Muséum – 6 décembre 1881. 8 FF (Fonds Perrier (cote Tatihou), Archives d’Anatomie Comparée, Muséum national d’histoire naturelle); Another piece titled « Historique » (a corrected double-sheet) indicates that Gustave Thuret, Edwards, de Quatrefages were presumably consulted.

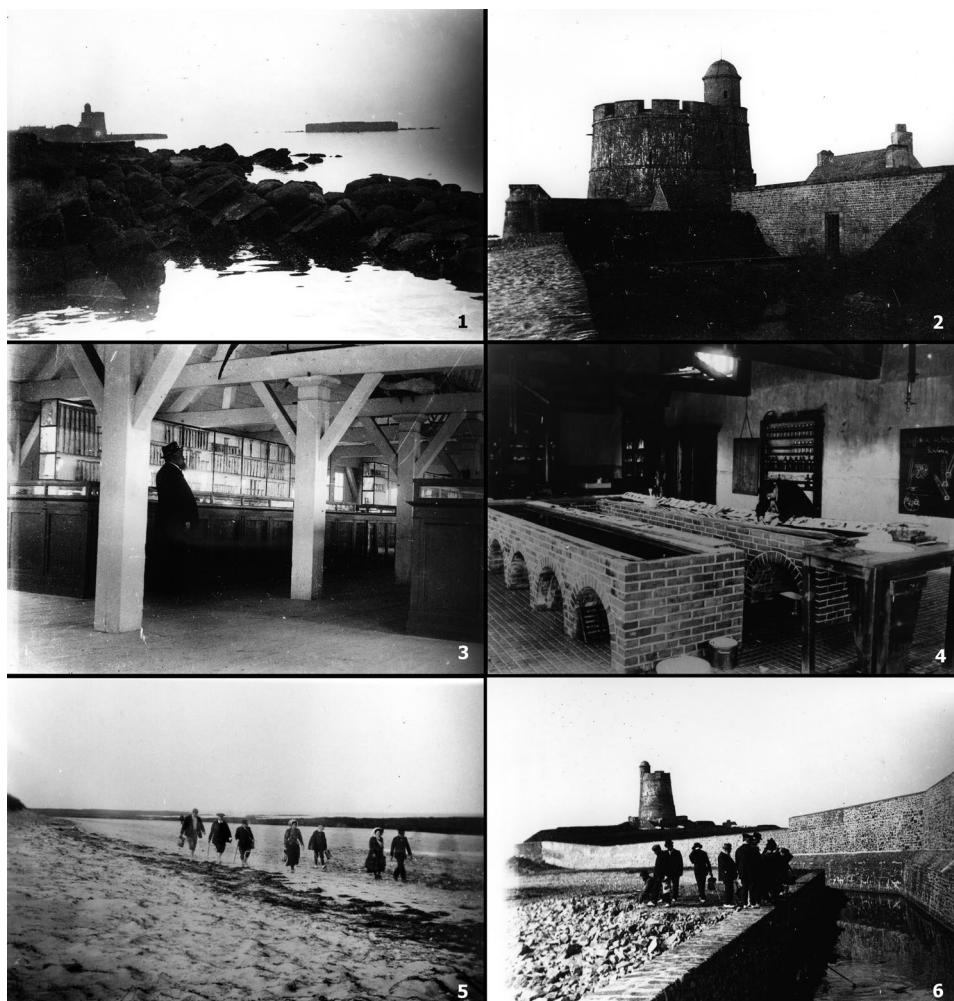
13. Philippe Van Tieghem (1839-1914), a professor and administrator of the Chair of Botany, Plant Organography and Physiology at the Museum since 1879.

14. Procès-verbaux de l’Assemblée des professeurs, 6 décembre 1881, vol. 59, pp. 180-183 (Bibliothèque centrale du Muséum national d’histoire naturelle, AM 64).

15. The maritime laboratory of Concarneau was the first marine station created in 1859 by Victor Coste, a professor at the Collège de France.

16. Archives Perrier, quoted January 31, 1888 (Anatomie comparée, Muséum national d’histoire naturelle, Paris).

17. The elimination of the Chair of Inorganic Chemistry in 1892 allowed a redistribution of the credits allocated to this chair to the maritime laboratory.



Figs 1-6. Marine Laboratory of the Muséum national d'Histoire naturelle à Tatihou, Saint-Vaast-la-Hougue. 1-2. Overview – 3. Collections room – 4. Sorting room – 5-6. Field trip around the Station (Anonymous photograph).

The laboratory directly reported to the Assembly of Professors. The professor of malacology (Perrier, assisted by Raoul Anthony¹⁸) executed the decisions of the Assembly. The laboratory was a structure of the École pratique des hautes études¹⁹; the lead of operations, Eugène Malard (1859-1916) lived on location, managed the few individuals required for daily operations (caretaker, boat driver, etc.), and reported to Perrier.

18. Raoul Anthony (1874-1941) will become the vice director of the marine laboratory in 1903.

19. The École pratique des hautes études was created in 1868 to “introduce into the academic mold a new training approach based on seminar attendance and laboratory works” (School website).

Trained in northern countries, in England and in Scotland, Malard came back with ideas and plans. He made the station as functional as possible for workers who wished to study the marine fauna and flora of the Channel. His knowledge of the marine flora of Tatihou would be valuable to all, as attested by Jean Chalon (1905) and Paul Hariot (1907, 1912) in their publications. In 1912, Hariot published the first flora of the algae of Saint-Vaast-la-Hougue.

His knowledge went beyond the floristic aspect as stated by Robert-Philippe Dollfus (1914): "André E. Malard was familiar with the living beings of his region of residence. He knew exactly their locations and behaviors. He had a detailed knowledge of the flora and fauna of each point on the coastline, of the Tatihou Island, for any season, no matter the variations". He published two notes (Malard, 1902 a et b) on these variations.

During the International Zoology Congress of 1898, Perrier and Malard (1898) noted that based on the observations of the east coast of the Channel for twelve years, it was proved that periodic changes in fauna and flora occurred and that the causes of such changes could be determined. Long term monitoring was therefore necessary, based on a common method and approach, of the physical and chemical conditions and the migrations in various permanent marine stations. This project was implemented by Louis Mangin through qualitative and quantitative research on plankton (Perrier and Anthony, 1907; Mangin 1908, 1913): regular dredging with registration of a data grid, counting of organisms using a specific staining for peridinians and diatoms. Mangin asked to constitute two portions of each catch and gave advice and instructions to Liot from 1908 to 1912. He was therefore able to demonstrate and monitor the succession of forms during the course of the year.

The establishment at the station of specific collections representative of the regional fauna and flora was a key element, furthering the studies by naturalists on the island. Malard was in charge of establishing a zoological and botanical collection. The collection was progressively enriched with various contributions and harvests. For algae, Edouard Bornet gave to the Tatihou marine station in 1892 the duplicate specimens collected by Thuret and himself at Saint-Vaast-la Hougue and in the region²⁰. The existence of many specimens collected before the creation of the station is explained by this gift. However, it can be noted that Hariot's numerous collections for his flora (Hariot, 1912) were deposited at the cryptogamy laboratory and not at the station herbarium.

On average 25 people attended the station each year. They either came for long stays, as in the case of Maurice Gomont (1839-1909) who liked to work on *Oscillaria* or for simple field excursions for students from provincial faculties²¹ and foreign students (Russian, Scandinavian, German, Swiss, English, and Spanish).

When the Chair of Cryptogamy created in 1904, Louis Mangin (1852-1937), its holder, used the laboratory based on its intended purpose: collection of material for the various local services and studies, notably during field trips (scientific and family) he led from 1907 (Anthony, 1908; Bessil, 1907; Hariot, 1907). Mangin viewed this as a practical application of his cryptogamy class (Fig. 7)

Just before the First World War, the Tatihou laboratory "offers naturalists the opportunity to pursue biological and systematic studies with a level of comfort previously unknown" (Wuitner, 1911).

20. Session of February 9, 1893. Minutes of the Assembly of Professors. Bibliothèque centrale du Muséum, AM 46. While we can ensure that they are duplicate taxa and collection points, we cannot assert the collection dates; a comparison with the Thuret-Bornet herbarium is required.

21. It is noted that Louis Corbière (1850-1941), a professor from the Lycée de Cherbourg and a friend of Mangin regularly came with his students to Tatihou and later to Saint-Servan.

Muséum d'Histoire Naturelle
Cours de Botanique Cryptogamique

Excursion Botanique au bord de la Mer à
St-Vaast-la-Hougue les 30, 31 mars et 1^{er} Avril 1907
dirigée par M. L. Mangin, Professeur.

1^{er} Jour Samedi 30 mars.

Visite du Laboratoire maritime du Muséum, le matin;
observations des algues en état de fructification. -
Le soir, excursion à l'Attouge: flore des marais salants,
des côtes vaseuses et des eaux saumâtres.

2^e Jour Dimanche 31 mars

Examen de la récolte de la veille, le matin. Déjeuner
à 10 heures, et départ en voiture pour l'excursion
des rochers de Gatteville : flore des rochers battus
par la mer, l'océanique.

3^e Jour Lundi 1^{er} avril

Le matin, examen de la récolte de la veille. -
Pêche au filet fin : récolte du plankton.
Le soir, visite de l'Île de Tatihou et du Rhun.
Flore des régions cotières abritées, tables et sables
vaseux à zostères, avec rochers isolés.

Le départ aura lieu Vendredi 29 mars à 8^h 42 (Gare
St Lazare, pour St Vaast par Valognes).

Les personnes désireuses de faire partie de l'excursion
sont priées de faire inscrire au Laboratoire de
Cryptogamie 63 Rue de Buffon, jus qu'au Lundi 25
mars, dernier délai. Elles trouveront au
laboratoire tous les renseignements relatifs aux frais
du voyage et de séjour à St Vaast.

Fig. 7. Leaflet of 1907, announcing a phycological field trip to Saint-Vaast-la-Hougue, under the direction of L. Mangin, Director of the Laboratoire de Cryptogamie.

SAINT-SERVAN

The laboratory buildings of Tatihou were requisitioned during the First World War and housed a camp of undesirables, causing significant material damage. The cost of rehabilitation was deemed too high. Jean-Baptiste Charcot²², a friend of Mangin, emphasized the diverse resources and the interest of the Rance region (the Rance estuary, the diversity of the coastal features and the large tidal range) and suggested the establishment of a new marine laboratory in the vacant premises of the arsenal of Saint-Servan.

The *Pourquoi-Pas?*²³ served as laboratory and even housing; as an extension of his class of the 1921-1922 winter, Mangin organized the first field visit to Saint-Servan during Easter 1922 (Lami, 1956). According to R. Lami (1956): "While waiting for the decision and the transportation of equipment, it was the *Pourquoi-Pas?*²³, moored in the harbor of Saint-Servan that served for a year as the floating maritime laboratory for the Museum".

After the authorization of the military navy and the merchant navy (1923), all the equipment from Tatihou was transferred in 1925 (Mangin, 1928). Significant works were required for the structure to become functional. Faced with the financial challenges of France, Mangin (1924) launched a call for donations to the Society of Friends of the Museum. It was only in 1926 that the station became operational (Gruvel, 1933).

Mangin (1928) gave a thorough description of this laboratory "located in the arsenal of Saint-Servan", locally called "la Marine", occupying part of the bay of Solidor in front of the tower of the same name" (Figs 8-13). The collections and the library of Tatihou were transferred there. While the aquarium occupied a large hangar (16x10m), the facilities were not enough "to have rooms, and the scientists were accommodated at night at the Saint-Servan middle school during school periods" (Mangin, 1928).

Three ships were affected to the laboratory: the *Albatros* (a fishery boat), the *Saint-Maudéz* (dundee, a sailboat acquired in 1932²⁴ for cruises), and a speedboat (given by J. Charcot).

It should be recalled that the station was directly placed under the direction of the Muséum national d'Histoire naturelle and that therefore Mangin, the director of the Museum from 1920 to 1932, was the head of the laboratory. Afterwards, Professor Abel Gruvel²⁵ was temporarily appointed for its management.

Mangin devoted a lot of time to the laboratory of Saint-Servan, leading regular field visits for the cryptogamy laboratory. He was assisted by the lead of operations from EPHE, Jean Delphy in 1914²⁶, succeeded by Gontran Hamel²⁶ in 1922 and Edouard Fischer-Piette²⁷ in 1927.

In the same way that he finished his class with an Easter field visit to Tatihou, Mangin brought his staff and students to Saint-Servan starting in 1922. Initially focused only on botany, the excursion themes extended to zoology. Regular participants included Louis Mangin, Gontran Hamel, Paul Biers, Léon

22. Jean-Baptiste Charcot (1867-1936), a French medical doctor and polar explorer.

23. This ship was acquired with a significant participation (10000 Francs) of the Society of Friends of the Museum.

24. Abel Gruvel (1870-1941), the administrator professor of the Chair of Fisheries and Colonial Productions of Animal Origin.

25. Jean Delphy (1887-1961) was trained in research by Yves Delage and will become the assistant of the Faculty of Sciences in Paris in 1922.

26. Gontran Hamel (1883-1944) will become the assistant of the Cryptogamy laboratory in 1927. In 1924, he founded the *Revue algologique* with Pierre Allorge.

27. Edouard Fischer-Piette (1899-1988) will become the deputy director of the malacology laboratory in 1936.



Figs 8-13. Marine laboratory of Muséum national d'Histoire naturelle at Saint-Servan. 8-9. Outside and inside of the aquarium – 10. The laboratory – 11. Robert Lami at Saint-Servan, *ca* 1930 – 12-13. Field trip around the station (Anonymous photograph).

Malacamp, Pierre Allorge, Emile Chemin, J. Bessil, Léon Géneau de Lamarlière, with a visit exceptionally organized by Adrien Davy de Virville in 1929 (Fig. 14).

The nomination of Gruvel gave a new impulse to the station. He suggested advertising the aquarium in order to increase the number of visitors, notably in the summer (8000 in 1932)²⁸. Above all, he was behind the purchase of the *Saint-Maudez* as he wanted for the station, a vessel able to go out at sea in all types of

28. The aquarium received 8000 visitors in 1932 (cf *Bulletin de la société des amis du Muséum national d'histoire naturelle et du jardin des plantes*, nouv. sér., n°7, octobre 1933, p. 27).

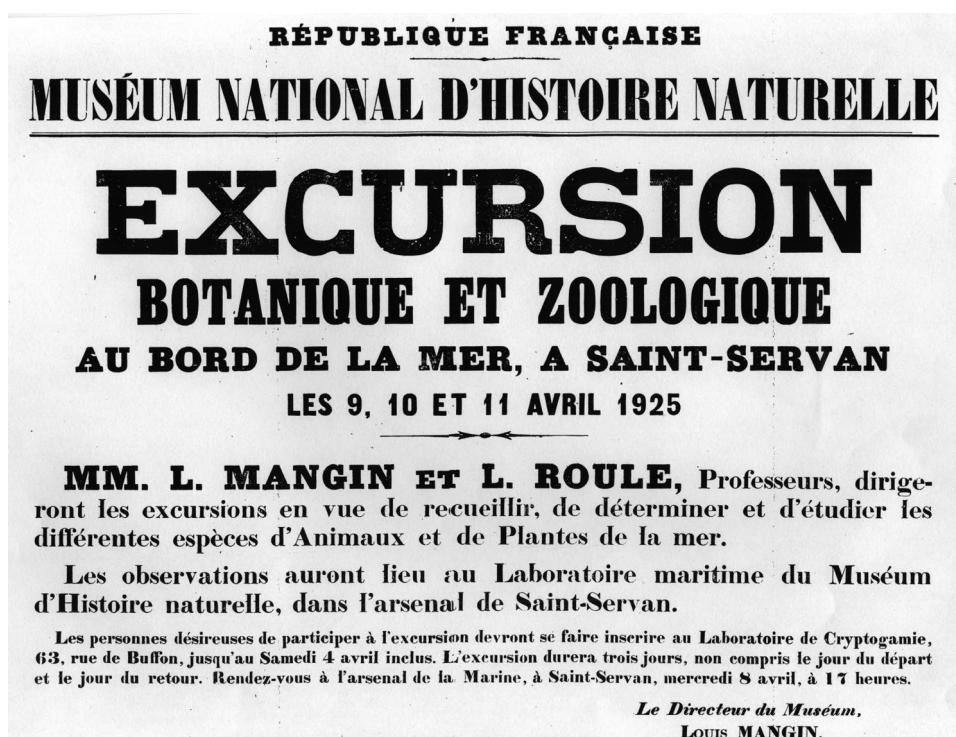


Fig. 14. Poster announcing a phycological field trip to Saint-Servan, under the direction of L. Mangin, Director of the Laboratoire de Cryptogamie.

weather and as far out as possible, particularly to reach the action area of the Roscoff laboratory (Gruvel, 1933) (Figs 15-16). He also noted that the presence on board of young women working at the laboratory²⁹ would not be frowned upon by the locals and the chief administrator of the navy inspection.

To promote the studies performed at Saint-Servan, Louis Mangin established the station bulletin³⁰ from 1928. It was published in 1928 under the title “*Laboratoire maritime du Muséum national d'Histoire naturelle à l'arsenal de Saint-Servan*” and from the year after the “*Bulletin du laboratoire maritime du Muséum national d'Histoire naturelle à Saint-Servan*”³¹. It contained among others Mangin and Fischer-Piette’s notes on marine organisms and the laboratory activities and Hamel’s notes on algae.

With the proximity of the seaside resorts of the Emerald Coast, the scientists could combine work and leisure activities (Fischer-Piette, 1936 or 1933). A note of

29. The number of female students was increasing and methods of instruction could not be discriminating. The navy remained strongly misogynistic.

30. This creation was in line with a very strong dissemination effort within the Chair of Cryptogamy, with three periodicals established: *Revue algologique* (1924, P. Allorge, G. Hamel), *Revue bryologique* (inherited from P. Husnot in 1928 by P. Allorge) and *Annales de cryptogamie exotique* (1928, R. Heim, P. Allorge, R. Potier de la Varde, G. Hamel, and N. Zahlbruckner).

31. Starting in June 1936, it was titled “*Bulletin du laboratoire maritime du muséum national d'histoire naturelle à Dinard*”.



Figs 15-16. The Marine laboratory uses boats for cruises. The women are welcome on the *Saint-Maudez* (15). At left, Louis Mangin and Jean-Baptiste Charcot (16) (Anonymous photograph).

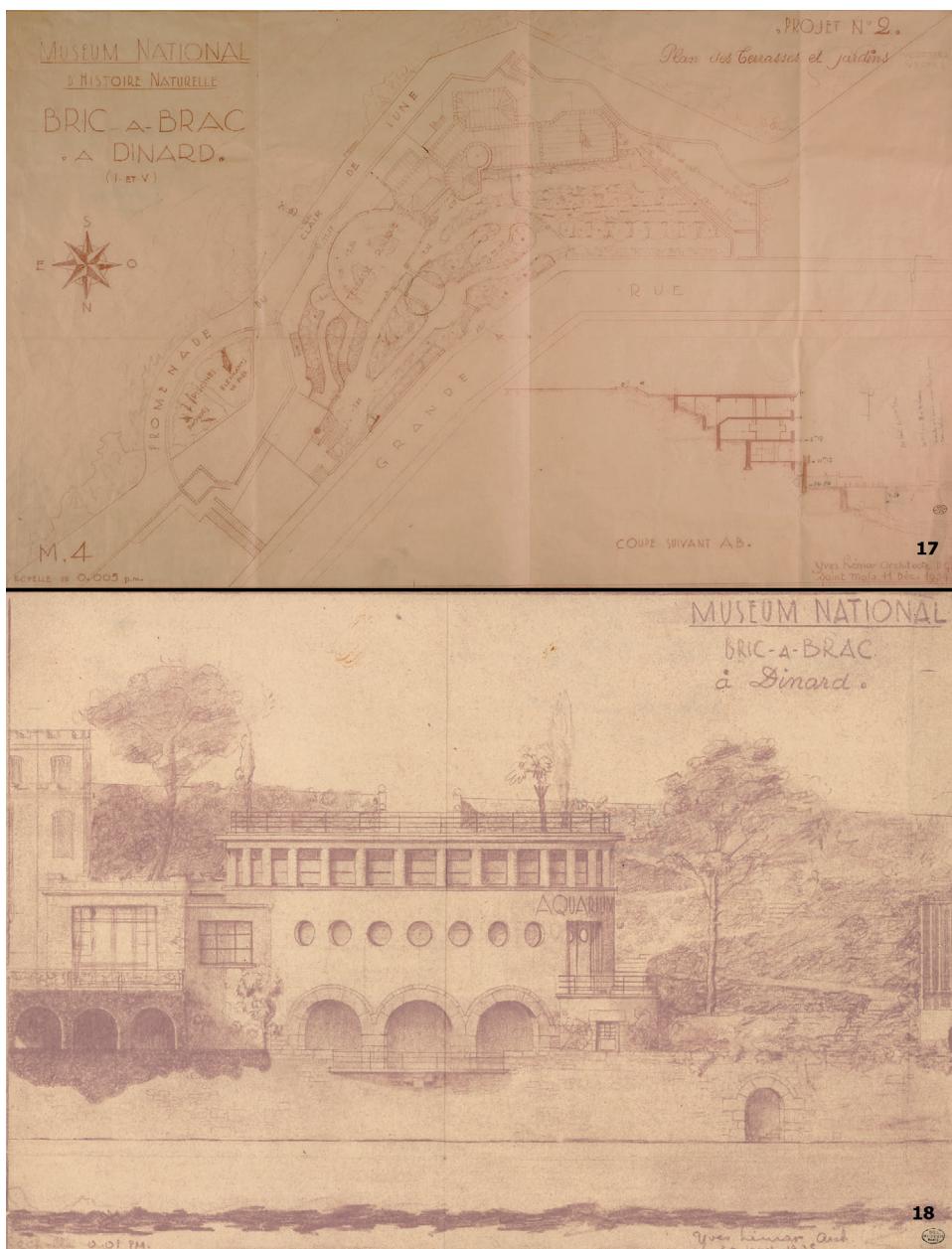
the Society of Friends of the Museum (probably by Gruvel) indicates that from 1926, the number of visitors was never lower than 17 with a maximum of 40 in 1929 (Anonymous 1933b). Nonetheless, the buildings were dilapidated and inadequate and Fischer-Piette (1936) noted that:

“The Saint-Servan facility became inadequate for the increasing number of workers, lately 30 to 40 people came each year in cramped premises”.

Finally, operation was very expensive and its usefulness was questioned as noted by Gruvel (1938) to the point that when Mangin retired in 1932, the Assembly of Professors decided the dissolution of the laboratory “which was unappealing but where we could work, which was its essential objective” (Gruvel, 1938). Fortunately, Gruvel obtained that the laboratory stayed temporarily open under the condition that he would lead it. However, in 1934, the two navies ordered the Muséum to move out.

DINARD

This amicable but firm eviction forced the Muséum national d’Histoire naturelle to identify another place to move the laboratory. The acquisition of a new building, the “Villa Bric-à-Brac” (Figs 17-20), in Dinard was decided: “For replacement, we purchased the most beautiful villa in Dinard [Called Villa Bric-à-Brac] with a splendid sea view between the two wharves for the Rance speedboats.



Figs 17-18. Project for a new Marine laboratory of the Muséum national d'histoire naturelle at Dinard. (Bibliothèque Centrale du Muséum, IC 1419 and IC 1421, with friendly permission of the Réunion des Musés nationaux ; *Muséum national d'histoire naturelle (Paris) – Direction des bibliothèques et de la documentation*, 2016).



Figs 19-20. Marine laboratory of Muséum national d'Histoire naturelle at Dinard. 19. Before the travels. 20. During the construction of the aquarium. (Photographs by Robert Lami, collection of the Botany Library of the Muséum national d'Histoire naturelle; *Muséum national d'histoire naturelle (Paris) – Direction des bibliothèques et de la documentation*, 2016).

We will move our marine laboratory, our aquarium; in addition, we will set a museum of the sea and a structure to house and feed the workers who wish to stay. The *Musée de la Mer* in Dinard will be one of the most remarkable maritime structures in France and even in Europe. We can be proud of the organization skills of Professor Gruvel who created the magnificent permanent Aquarium of Overseas France at the Porte Dorée. The museum of the sea will be ready for the beginning of the 1935 season" (Lemoine, 1934). It was inaugurated on June 19, 1935 and opened to the public on July 21, 1935.

The laboratory was described in the *Bulletin du Laboratoire maritime du Muséum national d'Histoire naturelle à Dinard* in June 1935. The villa had twelve rooms for the workers in addition to the offices of the director and the apartment of the deputy director. It also had a library for periodicals next to the museum, in the old dining room. This room also served as meeting room.

On May 31, 1937, during the annual opening of the Museum and the aquarium, a room for the souvenirs and documents of Dr. Jean Charcot³² was inaugurated.

To cover the establishment expenses and compensate revenue shortfall, Gruvel decided the creation of a patrons' committee of the maritime laboratory, the aquarium and the marine museum of Dinard. Sir Robert Mond who died in 1938 chaired this committee³³.

The « *Saint-Maudez* », acquired shortly before the move, pursued its trips in the Channel.

The laboratory was attached to the Chair of Fisheries and Colonial Productions of Animal Origin, led by Abel Gruvel. He was assisted by the lead of operations at EPHE, Edouard Fischer-Piette, who would be succeeded by Henri Bertrand³⁴ in 1936. When Gruvel retired (1940), the marine laboratory was placed under the jurisdiction of the malacology laboratory headed by Louis Germain³⁵. Fischer Piette was named deputy director of the Dinard station. After Germain's death (1942), he was named head of the Chair of Malacology and therefore director of the marine station of Dinard (December 1943).

In 1954, the laboratory and its outbuildings were attached to the direction of the Muséum national d'Histoire naturelle. Roger Heim, the holder of the Chair of Cryptogamy and director of the Museum became the director of Dinard. He appointed Robert Lami³⁶ deputy director.

Bertrand was in charge of the development of the station in Dinard. An entomologist but above all a biologist, he carried out with Robert Lami some research on animal and plant communities in the region of Saint-Malo. The construction of a hydroelectric dam on the Rance modified the diversity of algae in the estuary. This would be the subject of studies by Marie-Louise Priou³⁷, appointed deputy director of the maritime laboratory in 1964. She was also in charge of field visits and the organization of the herbarium.

32. "Nouvelles du laboratoire", *Bulletin du Laboratoire maritime de Dinard*, février 1838, 18: 1.

33. The committee has thirty some active members (annual membership of 100 Francs) and some benefactor members (who gave once over 500 Francs) (*Annuaire du Muséum national d'histoire naturelle*, 1939).

34. Henri Bertrand (1892-1978) was a Research Fellow at CNRS in 1944.

35. Louis Germain (1878-1942), holder of the Chair of Malacology in 1936, director of the Museum from 1936 to 1942.

36. Robert Lami (1889-1983), appointed deputy director of the cryptogamy laboratory thanks to the services he rendered, assuming alone the management of the laboratory in 1944-45, preserving the phycological herbaria (transferred to the time to the castle of Saint-Malo). For relational reason, Roger Heim would appoint him deputy director of the marine station.

37. Marie-Louise Priou (1916-2012), trained in Rennes, a Research Fellow at the CNRS, appointed to the maritime laboratory of Dinard (1955); after her thesis in 1962, she joined the Museum.

She was in charge of the marine station until 1988 when she was replaced by Christian Retière who mainly worked on the ecology of benthic community of the Norman Breton gulf. During the 80ies and the 90ies he focused on the evolution of the benthic assemblages of the Rance ria, after the construction of the tidal power plant. He also worked on the interactions between benthic habitats of the Mont Saint Michel Bay, and anthropogenic pressures such as aquaculture. As a co-leader – with the Prof Louis Cabioch of the Marine Station of Roscoff – of an interdisciplinary project, he also censused and mapped the benthic assemblages of the Channel. To date, this huge unprecedented work still remains a reference.

The “*Saint Maudez*”, that became out of date, was replaced in the 80ies by the “*Louis Fages*”, a trawler of 11 m.

In the 90ies, a hydrodynamic flume and experimental labs were built in the Villa. They enabled to study the behavioural responses of marine invertebrates to environmental drivers. The aquarium, that genuinely became unsecure, was closed in 2001, and because of a lack of willingness of the Muséum national d’Histoire naturelle it has never been reopened.

The marine station progressively became unsuitable for modern research and deteriorated due to a lack of maintenance, the renovation to updated standards of the « Villa Bric-à-Brac » needed substantial works. Instead the Professor Retière preferred to build a new research center, in collaboration with the Ifremer (Institut français de recherche pour l’exploitation de la mer) whose premises, located in Saint-Malo *intra muros*, and had also become unsuitable for their research and monitoring missions. The Maire of Dinard, Marius Mallet, who was very much in favor of the construction of a new research center in his town, ceded a building plot to the Muséum national d’Histoire naturelle.

The professor Retière retired in 2007 and the Professor Eric Feunteun, an ichthyologist and marine biologist, was then appointed as Director. The ‘Center of Research and Education on Coastal Systems’ CRESCO, was eventually built and inaugurated in April 2008. It is a modern building of 1300 m², well equipped with modern scientific means, experimental platforms and offices, hosts 3 research organisations totaling 35 to 40 staff, from the Muséum national d’Histoire naturelle, the Ifremer and the CNRS.

Research on macroalgae started again in 2009 thanks to E. Feunteun and directed the work of Régis Gallon who defended his Ph.D in 2013 on the functional and structural responses of Breton rhodophytes communities to global warming. Line Le Gall (associate professor of the Muséum) has worked since 2007 on a worldwide inventory of macro-algae, combining morphological and molecular approaches. Her research particularly focused on the Western Channel and the Norman Breton as a particularly interesting transition zone. She directed Marine Robuchon’s research on the macroalgal diversity associated to kelp forests biodiversity Brittany (France), who defended her thesis in 2014.

CONCLUSIONS

This brief history highlights the establishment and content of the Dinard herbarium in the light of the intense collections defined in the companion paper of this issue (Robuchon *et al.*, 2016).

1. The richness in specimens before the creation of the station was mainly due to the donation made in 1892 by Bornet and the relationships established with Norman botanists. This is why they came mostly from the region of Cherbourg. It should be reminded that after they left Cherbourg for Antibes (1857), Thuret and Bornet did not abandon the region: Bornet would come back and Auguste Pelvet regularly collected for the studies of algae reproduction led by Thuret and Bornet.
2. The years 1910-1930 were marked by the full operation of the station under the direction of Louis Mangin. The members of his network from the Muséum national d'Histoire naturelle and Normandy (notably Louis Corbière) regularly came to collect at Tatihou. However, it should be noted that the collections of Paul Hariot, the first author of a flora of Saint-Vaast-la-Hougue, were not deposited in the Dinard herbarium. On the contrary, the collections of Robert Lami, the tireless observer and collector on the coasts of Brittany since the 1910s were included: Ile-de-Bréhat, Roscoff, etc. Lami, who was familiar with natural sciences thanks to A. Milne-Edwards, a family friend, followed the teaching of Pierre Augustin Dangeard at the Paris Faculty of Sciences. His first visits to Roscoff definitely led him to study algae and marine biology. With Paul M. de Beauchamp, he studied the intertidal bionomics of the Ile-de-Bréhat (1921) and later, after joining the cryptogamy laboratory of the Muséum national d'Histoire naturelle, he monitored with Gontran Hamel the variations of the marine flora in the region of Saint-Malo, his research center in the spring and in the summer.
3. The 1945-1967 period corresponded to the rise of the marine station of Dinard with two main players in phycology: Lami, mentioned above, and Marie-Louise Priou, who focused more on biochemical than on floristic aspects. While the station received scientists from French and foreign faculties, it also hosted other enthusiasts such as André Pelletier (1902-1985), a Jesuit and a doctor of philosophy.

The common thread in this history of the marine station of the Muséum national d'Histoire naturelle is Robert Lami, who was active in a way or another in all three locations: Tatihou, Saint-Servan, Dinard. The station herbarium reflects this omnipresence and it is not surprising that it was often called the Lami Herbarium. His work still influences the research conducted in the marine station of Dinard, and more broadly on the biodiversity of temperate macroalgae.

Acknowledgments. This study was supported by the French State through the Research National Agency under the LabEx ANR-10-LABX-0003-BCDiv, within the framework of the program 'Investing for the future' (ANR-11-IDEX-0004-02) and the ATM 'Savoirs naturalistes, expertise et politiques de la biodiversité'. D. Lamy thanks Françoise Bouazzat for the reproduction of old photographs and the preparation of the plates, and Alice Lemaire and Hélène Foisil (Bibliothèque centrale du Muséum) for the photographs of Dinard Laboratory. D. Lamy thanks the 'Réunion des Musées nationaux' for their free authorization for some pictures.

REFERENCES

Anonymous, 1933 — « Laboratoire maritime du Muséum à Saint-Servan (Ecole pratique des hautes études) » in Travaux faits dans les laboratoires et accroissement des collections du Muséum national d'histoire naturelle pendant l'année 1932. *Bulletin du Muséum national d'histoire naturelle* 2^e série, 5 (1): 59-60.

- Anonymous, 1933 — *Bulletin de la société des amis du muséum national d'histoire naturelle et du jardin des plantes*, nouvelle série, n°7, octobre 1933.
- ANTHONY R., 1908 — Le Laboratoire maritime du Muséum d'Histoire naturelle (Saint-Vaast-la-Hougue) pendant l'année 1907. *Annales des sciences naturelles, Zoologie*, 9^e série, 7-8: 27-79.
- BEAUCHAMP P. de & LAMI R., 1921 — La bionomie intercotidale de l'île de Bréhat. *Bulletin biologique de la France et de la Belgique* 55: 184-238, pl. 4-7.
- BESSIL J., 1907 — Une excursion algologique aux environs de Saint-Vaast-la-Hougue et de Barfleur (Manche). *Bulletin de la société botanique de France* 54: 269-280, pl. 4.
- CHALON J., 1905 — *Liste des algues marines observées jusqu'à ce jour entre l'embouchure de l'Escaut et la Corogne (incl. Iles anglo-normandes)*. Anvers, J.E. Buschamnn, 259 p.
- DOLLFUS R.-P., 1914 — Les zones subterrestre et littorales à l'île Tatihou et dans la région de Saint-Vaast-la-Hougue (Manche). *Bulletin du Muséum national d'histoire naturelle* 20: 253-267.
- FISCHER-PIETTE E., 1933 — Le laboratoire maritime du Muséum national d'Histoire naturelle à Saint-Servan. *Terre et vie* 1933, n°10: 610-615.
- FISCHER-PIETTE E., 1936 — Le laboratoire maritime du Muséum d'histoire naturelle à Dinard. *Bulletin du laboratoire maritime de Dinard*, fasc. 15: 1-7.
- FREMY P., 1922 — L'étude des algues dans la Manche. *Mémoires. Notices et documents publiés par la société d'agriculture, d'archéologie et d'histoire naturelle de la Manche* 34, 17 p.
- GRUVEL A., 1933 — « Laboratoire maritime du Muséum à Saint-Servan (Ecole pratique des Hautes études) » in Travaux faits dans les laboratoires et accroissement des collections du muséum national d'histoire naturelle pendant l'année 1932. *Bulletin du Muséum national d'histoire naturelle*, 2^e série, 5 (1): 59-60.
- GRUVEL A., 1938 — « Discours de M. le professeur Gruvel », in : *A Louis Mangin*, Dinard le 19 juin 1938, 4 p. non paginées.
- HARIOT P., 1907 — Excursion algologique du laboratoire de cryptogamie à Tatihou. *Bulletin du Muséum national d'histoire naturelle* 13: 352-356.
- HARIOT P., 1912 — Flore algologique de la Hougue et de Tatihou. *Annales de l'Institut océanographique* 4(5): 1-54.
- LAMI R., 1937 — Louis Mangin (1852-1937). *Bulletin du laboratoire maritime de Dinard* 17 (août 1937): 1-6.
- LAMI R., 1956 — J.B. Charcot et le Laboratoire maritime du Muséum En souvenir du 16 septembre 1936. *Bulletin de la station maritime de Dinard*, fasc. 42: 3-4.
- LEMOINE P., 1935 — Le muséum national d'histoire naturelle et son développement en 1934. *Revue scientifique* 73: 299-307.
- MALARD A.-E., 1895 — Le laboratoire maritime du Muséum de Paris. *Le naturaliste*, (Paris : Emile Deyrolle Fils), 1895, 13 p.
- MALARD A.-E., 1902a — Des variations mensuelles de la faune et de la flore maritimes de la baie de la Hougue (novembre et décembre). *Bulletin du Muséum national d'histoire naturelle* 8: 30-35.
- MALARD A.-E., 1902b — Des variations mensuelles de la faune et de la flore maritimes de la baie de la Hougue (janvier et février). *Bulletin du Muséum national d'histoire naturelle* 8: 190-197.
- MALARD A.-E., 1905 — « Le laboratoire maritime du Muséum à l'île Tatihou ». In : *Cherbourg et le Cotentin*, Cherbourg, imp. Le Maout, pp. 667-688.
- MANGIN L., 1908 — Sur la flore planctonique de Saint-Vaast-la-Hougue, en 1907. *Bulletin de la société botanique de France* 55 (10 janvier 1908): 13-22, 2 pl.
- MANGIN L., 1913 — Sur la flore planctonique de la rade de Saint-Vaast-la-Hougue 1908-1912 ». *Nouvelles archives du Muséum*, 5^e série, 5: 147-253.
- MANGIN L., 1924 — Rapport financier de la Société des amis du Muséum. *Société des amis du muséum national d'histoire naturelle et du jardin des plantes* novembre 192: 32-33.
- MANGIN L., 1928 — *Laboratoire maritime du Muséum national d'histoire naturelle à l'Arsenal de Saint-Servan*. Saint-Servan, Impr. J. Haize, 15 p.
- MANGIN L., 1913 — Sur la flore planctonique de la rade de Saint-Vaast-la-Hougue 1908-1912. *Nouvelles archives du Muséum*, 5^e série, 5: 147-253.
- PERRIER E., 1879 — Muséum d'Histoire naturelle de Paris. Zoologie (Annélides, Mollusques, Zoophytes). Cours de M. Edm. Perrier. Réorganisation du Muséum. *Revue scientifique*, 2^e série, 8 (30): 693-699.
- PERRIER E. et MALARD A.-E., 1898 — Sur les relations à établir entre les différents laboratoires maritimes pour l'étude de certaines questions de biologie générale des êtres marins. *Proceedings of the international congress of zoology, Cambridge* 1898: 225-226.

- PERRIER E., 1888 — Le laboratoire maritime du Muséum d'histoire naturelle. *La nature* 16 (794, 18 août 1888): 186-188.
- PERRIER E. et ANTHONY R., 1907 — Organisation d'une étude générale du Plankton de la baie de la Hague. *Bulletin du Muséum national d'histoire naturelle* 13: 559-563.
- PERRIER E., 1908 — Le Muséum national d'Histoire Naturelle. *Revue scientifique*, 5^e série, 9 (19): 577-582.
- ROBUCHON M., LAMY D., KERVRAN L., DENNETIÈRE B., JULLIARD R., LE GALL L., 2016 — Dinard Herbarium: A source of information to infer temporal changes in algal communities? *Cryptogamie, Algologie*, 2016, 37 (1): 47-60.
- WUITNER E., 1911 — « Une excursion algologique à l'île de Tatihou ». *Bulletin de l'association des naturalistes de Levallois-Perret* 6 (3): (1)-(4).