

Phycological Trailblazer

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Édouard Bornet

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Jean-Baptiste Edouard Bornet was born on Sept. 2, 1828, in Guérigny, France, the eldest of four sons. His father was a cashier at the Chaussade Foundry. Bornet received his education at the college in Nevers. He often was an irritant to his instructors and was threatened with expulsion, but the fact that he was consistently at the top of the class saved him from being expelled (Flahault, 1924). His summers and holidays were spent collecting and identifying plants around his hometown. A senior official at the foundry where his father was employed noticed his interest and arranged to loan the young Bornet a microscope to encourage him, and that proved to be a decisive step in molding his future career.

Upon graduating from college with honors in 1846, Bornet was happy to escape from a possible bureaucratic life. His family directed him toward medicine because of his love of nature (and plants). He headed for Paris, where his life was eased by the support of the parents of the young lady who was to become his future wife and life-long companion. Ever the eager student, Bornet divided his time with the faculty of medicine, the Sorbonne, and the Museum. When he was

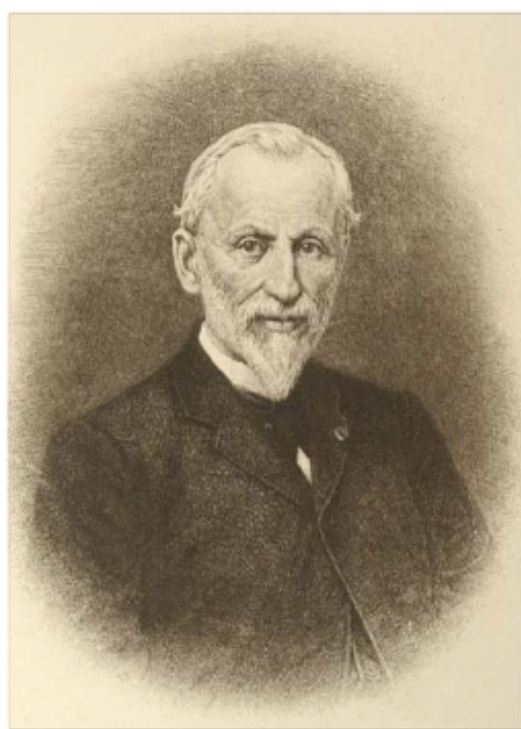
appointed as an extern for the hospital, his momentum was interrupted by his being called to serve in the military. But his family came to his rescue and persuaded his younger brother to take Bornet's place, an arrangement that was then possible.

Bornet was able to continue his studies without problems. He came under the wing of Dr. J. H. Lévillé, an authoritative mycologist of the time. Lévillé was careful not to encourage Bornet into a scientific career without having sufficient means. Bornet was not deterred, and in 1851 he had his first publication in the *Annales des Sciences Naturelles*, a report on the fungal genus *Meliola*. The paper was accompanied by two plates, which revealed his

artistic talents. Bornet became acquainted with the eminent botanists of the time who often gathered at Lévillé's home.

At a time when Bornet lacked the resources to complete his medical studies, upon the advice of Joseph Decaisne, Gustav Thuret proposed that Bornet become his assistant, an offer which Bornet accepted (Woelkerling & Lamy, 1998). The two went to Versailles in 1852, where they spent the summer collecting and studying plants, especially the cryptogams. Before the end of 1852, Bornet and Thuret established themselves in Cherbourg, and despite the rigors of

the winter season, they initiated their studies on marine algae. They quickly realized that the marine vegetation and the reproductive state of the algae were very different in the winter months than that of late summer. But Thuret became ill, brought on both by exhaustion and



Édouard Bornet [from Bulletin de la Société Mycologique de France vol. 29, 1913].

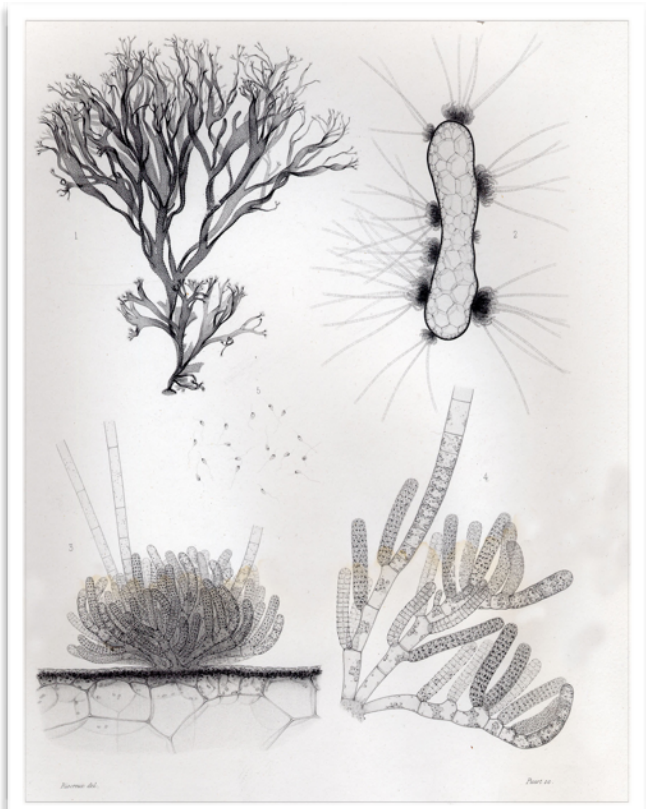


Fig. 1. *Cutleria multifida* (Turner) Grev. Pl. IX in Thuret & Bornet (1878).

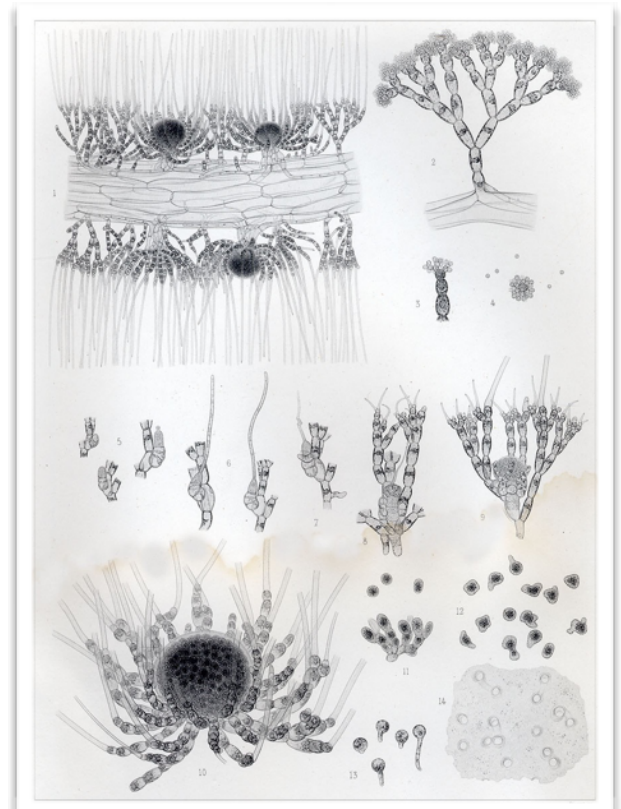


Fig. 2. *Helminthora divaricata* (C. Agardh) J. Agardh, Pl. XXXII in Thuret & Bornet (1878).

the winter conditions at Cherbourg. Bornet recognized the need to complete his medical training, and so he returned to Paris to take his final exams in November of 1854. He presented a thesis on the sexual reproduction in both animals and plants, stressing the plants. He earned his 'medical qualification' in August 1855 and soon returned to Cherbourg.

The two men complemented each other perfectly. Despite having different personalities, a strong friendship and an effective working relationship developed between Bornet and Thuret. Thuret was tall, with a light complexion (maybe due to his grey hair), spoke slowly, and carried himself with a stately demeanor, while Bornet was short, with a dark complexion, and spoke with much animation. Thuret came across as slightly English, while Bornet was the quintessential Frenchman (Farlow, 1876). The young doctor was well trained and always ready to work, an expert photographer, a skilled artist, alert in body and mind. He had the agility to

maneuver over slippery boulders, and he was preoccupied with lifting the spirits of his patient, Thuret.

The constant dampness of the Cherbourg climate eventually led to Thuret's decision to spend the winter at Cannes on the Riviera. He rented a villa and returned the following winter. Eventually, Thuret purchased a site on the Antibes coast where he built a home and where he, with Bornet, would carry out their research. The two colleagues had an ideal location to pursue their research on marine algae, the home becoming full of notes, drawings, and manuscripts in various stages of completion. Their research encompassed every group of marine algae, and it was their collaboration that solved the difficult question of sexual reproduction in the red algae. Papenfuss (1955) credited Bornet & Thuret (1866, 1867) as the first to clearly describe sexual reproduction in a number of red algae. Thuret employed the artist Riocreux, who rendered the illustrations with

both great accuracy and beauty. It was only during the heat of the summer that Thuret and Bornet would move northward to spend time briefly visiting family and friends in Paris and then on to the Atlantic coast before returning to Antibes in the autumn.

In 1875 Thuret suffered a fatal heart attack at the age of 57 (Bornet, 1875). He left his library, his collections, and a number of unfinished manuscripts to Bornet, along with a generous endowment to allow Bornet to continue his work independently. Bornet completed much of the collaborative work (Bornet & Thuret, 1876, 1880; Thuret & Bornet, 1878). Madame Henri Thuret, Thuret's sister-in-law, purchased the villa with the hope that Bornet would stay on and continue the work he had done with Thuret. But Bornet decided to retire to Paris, where he and his wife occupied the first floor of an old building. Their apartment became a meeting place for younger scientists. Even though Bornet had no formal links to a University, he was regarded as a font of knowledge, to whom many came for scientific advice. These included Maurice Gomont, E. P. Munier-Chalmas, Paul Hariot, Charles Flahault, and Anna Vickers (Woelkerling & Lamy, 1998). Bornet & Flahault's (1886-1888) monograph of heterocyst-containing Nostocaceae has been accepted by the Code to serve as the later starting date of nomenclature on this algal group. Bornet & Flahault (1889) also collaborated on a detailed examination of the algae (e.g., *Ostreobium*, *Gomontia*, *Mastigocoleus*, et al.) that lived within calcareous substrates. Bornet had the highest reputation as a scientist and was a

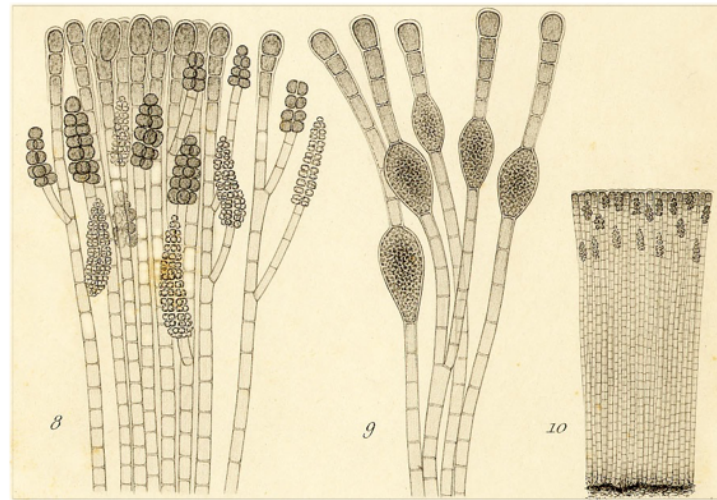


Fig. 3. *Nemoderma tingitana* Schousboe. Pl. I, figs 8-10 in Bornet, 1892.

member, or corresponding member, of some 27 scientific societies around the world (Guignard, 1912; De Wildeman, 1913).

Bornet and his wife bought a holiday home at Cosne in the center of France, where they had both a garden and a working laboratory. The students were also welcomed

there, as they were in their apartment in Paris. Bornet and the students would carry on stimulating conversations as they walked along the Loire River. The Bornets spent their summers at Cosne and spent the rest of the year in Paris. Toward the end of his long life, Bornet worked to put his algal herbarium and other affairs into order. He donated his collections, which included the Thuret herbarium, to the Paris Museum (Woelkerling & Lamy, 1998). His health declined toward the end of 1910, and he died on 18 December 1911, at the age of 83. His devoted wife was looked after by Bornet's many friends and survived him by another 10 years (DeToni, 1910; Flahault, 1924).

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[Article 13.1(e) of the International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) treats the four parts of the "Révision" as having been simultaneously published on 1 January 1886.]

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