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## **Pioneers of plankton research: Eugène Canu (1864-1952)**

Eugène Canu made many contributions to copepod research in the late 19th century. Between 1886 and 1901 he published dozens of papers and a book on copepods of the eastern English Channel. Interestingly, he went on from copepod research to become an aquaculture and fisheries scientist, then a high school administrator, then a ship owner and official in fisheries organizations, and he finally on to have a long career in politics. Canu, in one of his last roles, that of Mayor of the city of Boulogne-sur-Mer is shown in Figure 1. Here we tell the story of Canu, whose life shows that plankton research can lead to many different destinations.

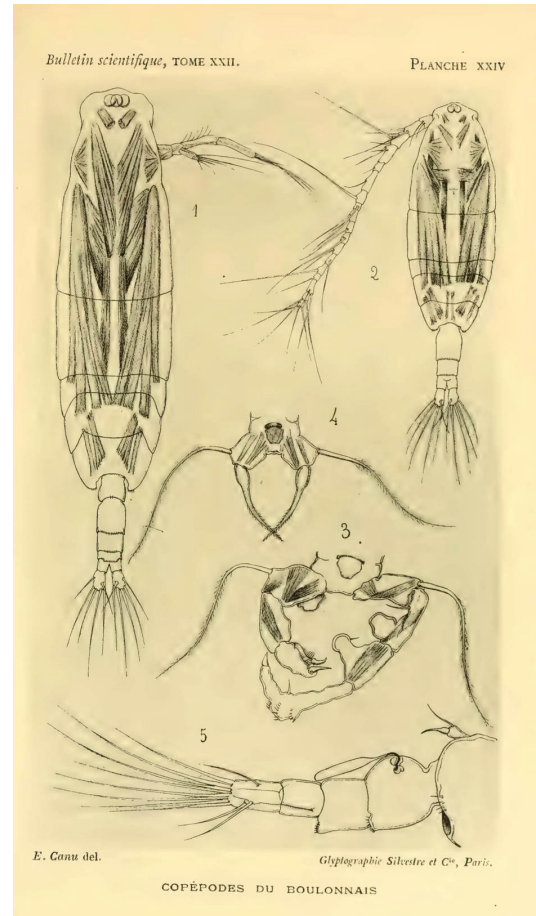
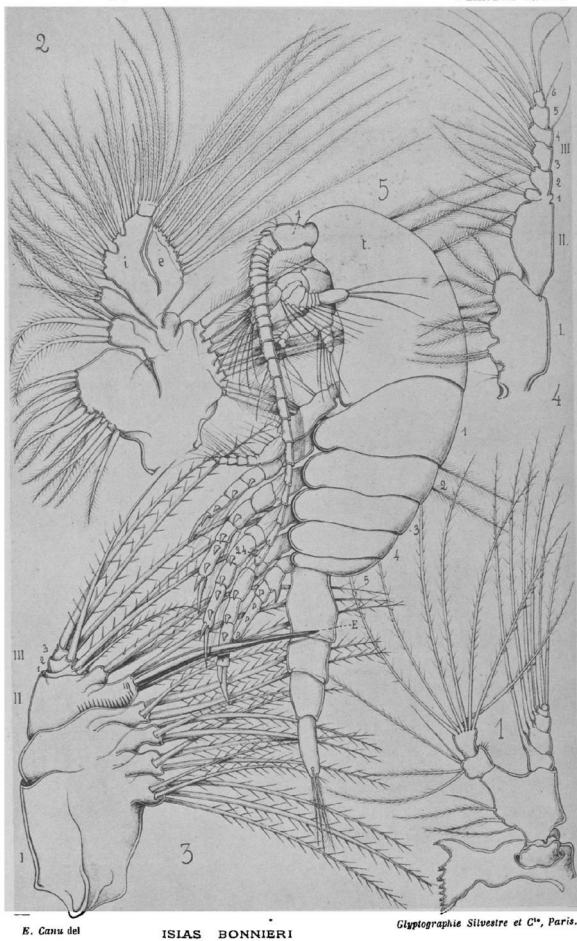
### **Eugène Canu's work on copepods**

Eugène Canu (Figure 1) was born on 11 September 1864 at Trith-Saint-Leger, close to Valenciennes, in the North of France. He studied at the Faculty of Sciences of Lille, in the field of natural sciences. He worked under Alfred Giard who had founded the Wimereux Marine Station in 1874. At that time Wimereux was a small resort in the coast of Eastern English Channel. Eugène Canu earned his Bachelor of Natural Sciences in 1883. His first publications were translations of current German works (e.g. Canu 1884) and his own research on ciliates (Canu, 1886c), all published in Giard's journal. In 1885 he began his studies of copepods. In 1888 Giard was recruited as assistant professor at the Ecole Normale Supérieure of Paris. So, Eugène Canu defended his PhD thesis in 1892 at the Faculty of Sciences of Paris. By that time, he had already published papers on parasitic copepods (Canu 1886a,b) and his PhD thesis was published in 1892 as a full volume of *the Travaux du*



**Fig. 1.** Eugène Canu when he was Mayor of the city of Boulogne-sur-Mer from age 54 to 58.

*laboratoire de Wimereux* (Canu, 1892a). Canu published a series of 5 papers on marine copepods of the Calais-Dover strait (Canu 1888a,b,c; 1890a; 1891a) and also, at the same time, a series of papers on parasite copepods in the *Comptes Rendus de l'Académie des Sciences de Paris* (Canu, 1890b,c; 1891b). Today, Canu is credited with the original description of eight genera and several new species. His articles and thesis included numerous nice drawings of copepods, as shown in Figure 2.



**Fig. 2.** Left panel: *Isias bonnieri* from Canu, 1888b, now known as recognized as *Isias clavipes* Boeck, 1865. Right panel: *Acartia clausii* Giesbrecht, 1889 (in Canu, 1890a).

### Activities in aquaculture research and the fishing industry

Eugène Canu was recruited as assistant in the Aquaculture Station of Boulogne-sur-Mer (*Station Aquicole*) in 1891, shortly before defending his Ph.D. thesis. Founded in 1883, the mission of the station (shown in Fig. 3), was to aid the local fishing industry. It was charged with the investigation and promotion of all matters affecting fisheries and fishermen. For example the determination and promotion of salts that were best for preserving fish and investigating the possible uses for fishing discards. The work of the Aquaculture Station was applied. Canu published papers on fisheries and on fishing methods, in parallel with publications on copepods (Canu, 1893b; 1894a,b,c; 1896; 1898; 1899; Canu and Cligny, 1901). In the applied research framework he studied copepods in relation with fishes. Copepods were rightly seen as an important part of the diet of many fishes, especially herring, and therefore of importance for the fishermen of Boulogne-sur-Mer.

The Aquaculture station published from 1892 to 1909 its own periodical, the *Annales de la Station Aquicole de Boulogne-sur-mer*, in which Canu published many works. He published works on parasite copepods of fish or molluscs (Canu, 1893a, 1894b,c), on diatoms, pelagic eggs (Canu 1893c, 1894e). He also published on the mackerel salting techniques required for sales in the United States as recommendations to the French fish industry to penetrate the American market (Canu 1893b). He advocated the development of fish farming as a remedy for over-fishing. He proposed hatching of fish eggs in aquaculture farms and then the release of larvae in the sea (Canu, 1894d). Some of his publications were translations of works in German or in English, on the impact of cholera on the fishing industry in Germany (Canu, 1893c), or other information on the fishing industry in Europe or in the US (from the Boston fish Bureau).



La Station Aquicole de Boulogne s/mer (1883).

**Fig. 3.** The Aquaculture Station (*Station Aquicole*) of Boulogne-sur-Mer, a center for applied fisheries research. Eugène Canu began working there first an assistant, then deputy director, and then became director.

Canu was deputy director of the Aquaculture station in 1891, and he became the second director of the Aquaculture station in 1894, a position he occupied until 1902. During this period he founded and was the first director of a professional high school dedicated to training students to work in the fishing industry (*Ecole professionnelle des Pêches Maritimes*) from 1897 to 1901 (Figure 4). Such a high school still exists today in Boulogne-sur-Mer, as the *Lycée Professionnel Maritime et Aquacole Boulogne-Le Portel*.

When Canu resigned his position of Director of the Aquaculture Station he ended all his scientific activities. He became a shipowner and devoted himself entirely to the fishing industry. Canu assumed some important roles in the field of fisheries administration. He was president of the fisheries section of the central committee of French shipowners, then vice-president of the Scientific and Technical Office of Maritime Fisheries (Office Scientifique et Technique des Pêches Maritimes). He also became involved in social issues, for example by defending retired fishermen pensioners, the orphans of fisherman, and by promoting public education. This no doubt led to his long political career (32 years) that actually began when he was still Director of the Aquaculture Station.

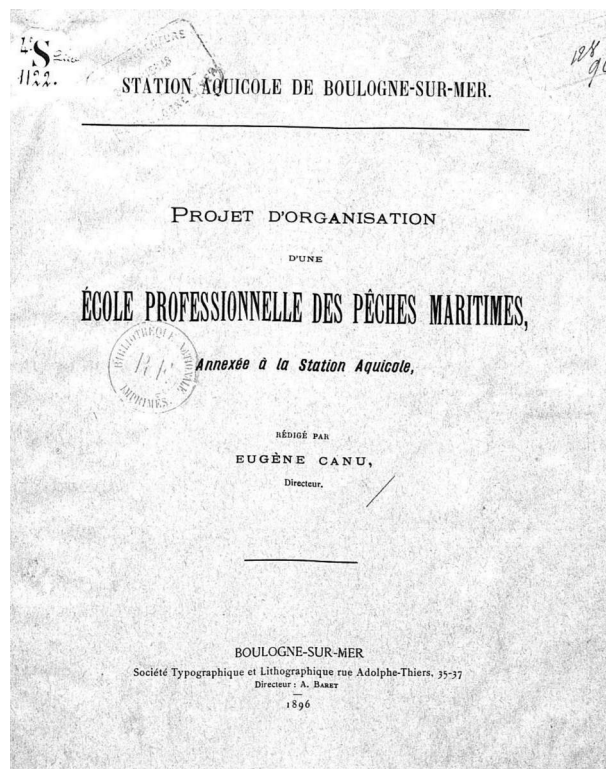


Fig. 4. The cover page of Canu's project, the creation of a professional high school devoted to training students to work in the fisheries industry (from Canu (1896)).

In 1900, as a member of the radical socialist party, Canu was elected a city councilor of Boulogne-sur-Mer. He served as President of the General Council of Pas-de-Calais (roughly a county administration) from 1828 to 1934). In 1928 Canu was elected to national office, serving as a member of Parliament for Pas-de-Calais from until 1932. He later returned to local office and served as Mayor of Boulogne-sur-Mer from 1935 to 1940. He was dismissed

by the Vichy regime and expelled from Boulogne-sur-Mer during the war. He became Mayor again when the city was liberated on 19 September 1944 until the election of 1945. His political career was not all successes. Canu ran for election as a Senator for the Pas de Calais region in the national government in 1933, at age 69, but was not elected. There are few records of his activities in the latter part of Canu's life. He died in Boulogne-sur-Mer on January 6, 1952, at the age of 88.

Eugène Canu was, successively, a copepodologist, an aquaculture and fisheries scientist, a high school administrator, a ship owner, an official in fisheries organizations, and finally a politician. Canu's life provides an early and excellent example of career mobility of a plankton researcher!

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