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Marine Sciences in Germany

THE RESTART IN KIEL AFTER WORLD WAR II

By Gerold Siedler, Jörn Thiede, and Walter Zenk

The first German paper on oceanography was published in Kiel in 1697 (Kortum, 1994) at the beginning of the country's long history in ocean science. Following successful development during the nineteenth and early twentieth centuries, culminating in the Atlantic Ocean Expedition of the first research vessel *Meteor* from 1925 to 1927 (Spiess, 1928), marine sciences almost disappeared from the defeated nation at the end of World War II. Because the country was mostly landlocked, it was not obvious to occupation authorities and German politicians that the country should again develop a strong marine science capacity. Nevertheless, the restart began, mostly at Kiel University and at the newly founded German Hydrographic Office in Hamburg.

For several decades preceding World War II, the institute of marine sciences at

Berlin University had been the country's leading marine research institution. Wartime bombing destroyed it, its East Berlin ruins were demolished, and all its surviving researchers moved to West Germany and Austria. In 1946, just a year after the war's end, one of these scientists, Georg Wüst, took on the task of rebuilding ocean research and education at Kiel University's institute of marine sciences (Institut für Meereskunde, IfM). His successor Günter Dietrich, who had also worked at the Berlin institute, took up the charge in 1959. These leaders shifted the field's emphasis from marine biology and chemistry in shallow seas to strong involvement in deep ocean research, particularly physical and chemical oceanography (Zenk et al., 2018).

Parallel to the IfM's development, marine geosciences began to blossom at Christian-Albrechts-University (CAU),

also in Kiel, when Eugen Seibold became director of the geological institute in 1958 (Thiede et al., 2018). Over more than two decades, the CAU became the primary center of marine research and student education in Germany, as highly motivated members of these small research groups augmented the efforts of the earlier Berlin marine researchers.

The initial conditions were difficult, marked by a lack of financial, technical, and personnel resources. Nevertheless, the immediate post-war period included the return of German ocean scientists to the international science community and to its programs, beginning with the International Geophysical Year (1957/58). During the first decades after World War II, a German fleet of new, dedicated research vessels came into operation, starting with the second *Meteor* based in Hamburg and its participation in the International Indian Ocean Expedition in 1964/65 (Figure 1). The second *Poseidon* in Kiel followed in 1976, the polar research ship *Polarstern* in Bremerhaven in 1982 (Figure 2), and the third *Meteor* in Hamburg in 1986. A number of smaller vessels complemented the pool of German research vessels during these years. New technologies and methods were introduced, from CTD probes to deep-sea moorings and drifting floats, from drilling devices to submersibles and automatic robotic devices, and from the use of satellite data to super-computer modeling.

When looking at the early results, one needs to be mindful of the fact that our marine science publications were mostly presented in the German language until



FIGURE 1. The second German research vessel named *Meteor* called at a Suez Canal port during its participation in the International Indian Ocean Expedition (IIOE) in 1964/65. Photo credit: G. Siedler



FIGURE 2. The icebreaker *Polarstern*, commissioned in 1982, takes researchers to Arctic and Antarctic waters. Photo credit: M. Hoppmann, Alfred-Wegener-Institut, Bremerhaven

the mid-1970s, when English-language publishing became more common among German marine scientists. Today, the high quality of German marine science is well established in international networks. In 2004, the Institut für Meereskunde and the Research Center for Marine Geosciences (GEOMAR) merged and in 2012 became the GEOMAR Helmholtz Centre for Ocean Research. This institution, along with dedicated departments of CAU, comprise a Kiel-based marine science staff exceeding 1,500 people from more than 40 countries and involving virtually all marine disciplines.

In addition, ocean science activities have developed at other locations in Germany over the years, and there currently exists a thriving marine research community totaling more than 3,000 staff located in Kiel, Hamburg, Bremen/Bremerhaven, Wilhelmshaven, and Warnemünde/Rostock as well as at several other universities and research institutions. ©

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