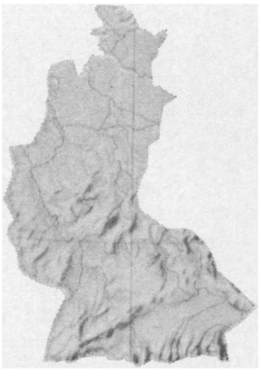
LETTER FROM FRANKFURT



Hat in the ring

Germany is moving into the study of oceans

by Ted Shoemaker

Germany has ended its long neglect of oceanography, a field in which it once pioneered. Since 1962 the Germans have increased the number of the nation's large research vessels from two to seven, and the number of German scientists and technicians in the field from 253 to 527.

A modern undersea laboratory is to be sunk 60 feet into the North Sea off Helgoland in June. Scientists also are pushing for another big research ship to operate in nearby waters, plus assorted artificial islands, buoys and helicopters.

Recent accomplishments are an improvement over the past, but don't compare with the efforts of others. France (SN: 4/12, p. 366) and Britain are spending around $20 million a year each, compared to Germany's $7.5 million. Germany plans to increase its oceanography budget to near the Anglo-French level by 1972. But even if things are adjusted for population differences all of these programs are small compared with the American and Russian ones. The U.S. expects to spend $500 million in fiscal 1969; Russia is estimated to have 200 ships and 2,000 marine scientists.

The Germans claim their program makes up somewhat in efficiency for what it lacks in size. Five of its ships have been built since 1963, and make maximum use of automation and data processing. The sea laboratory will be very up-to-date; serviced by a buoy rather than a ship and usable all year round. It will have comfortable crew quarters and an escape capsule that floats to the surface for later opening within a decompression chamber.

The program is comprehensively organized. The Federal Government is taking the coordination out of the hands of the German Research Association, which managed the postwar revival. For seven years, an unusually long time, the association handled the long-range planning and made substantial financial contributions.

Science Minister Gerhard Stoltenberg has formed the German Oceanography Commission, headed by Dr. Herbert Müller-Roschach.

There are eight German institutes directly concerned with oceanography, plus numerous meteorological and other agencies with a major interest in the field. The pride of the oceanographic fleet is the Meteor, a large ocean-going vessel commissioned in 1964 and built especially for the purpose. It is the namesake of an earlier German ship, which did pioneering work in 1925-27.

Other high-seas research ships are the even newer Planet, commissioned in 1967 and operated by the Defense Ministry, and the fisheries research ships Walter Herwig and Anton Kohrn. There are also three large ships, Gauss, Alkor and Friedrich Heincke, and seven smaller ones, operating only in the neighboring North and Baltic Seas.

The Meteor is currently on an extensive Atlantic expedition, which began in January and is to last until May. It is doing research for 25 different institutes, 19 of them German, 2 British and 4 American. The vessel has accommodations for only 24 scientists, so personnel exchanges are being made constantly by air.

On the first part of the expedition, the Meteor joined three other ships, the Planet, America's Discoverer and Britain's Hydra, to cross the Atlantic diagonally in formation. They measured the trade winds with highly sophisticated instruments, including gyroscopically stabilized wind and weather radars, feeding to computers.

Then the Meteor was scheduled to spend a month anchored in the mid-Atlantic at the point (30 degrees west) where the magnetic and geographic equators cross. It did the same thing in 1965 and is to compare that Quiet Sun Year with the active sun year, 1969. Finally, the ship is to take a long cruise along the 30th meridian, from 10 degrees to 60 degrees, constantly monitoring the air's chemistry. The main purpose of this expedition is to learn more about the energy exchange between the atmosphere and ocean (see p. 411).

This is one of the five principal fields of study for German oceanography. The other four, as outlined by Dr. Friedrich Wilckens of the German Science Ministry, are:

- The use of the ocean for nutrition. Germans are seeking a better biological knowledge of the fish populations in the Arabian Sea, and in the Atlantic off Africa and South America. They are also looking for better sounding devices for locating fish schools, improved catching methods and ways of breeding fish in coastal waters.
- Extraction of minerals, both from seawater and from the ocean floor.
- Fighting pollution with techniques for cleaning up oil without poisoning the water.
- Coastal research, aimed especially at avoiding a repetition of the disastrous 1962 floods in northern Germany.