

LETTER FROM FRANKFURT



# Impetus for action

**A disastrous and  
dangerous fishkill  
in the Rhine may  
stimulate cooperation**

by Ted Shoemaker

Often a disaster or a near-miss is needed to force common action on a much-needed project. It appears that the massive insecticide poisoning of the Rhine River in Westphalia may be such a catalyst. Europeans last year organized a continent-wide charter for water pollution control under the aegis of the Council for Europe (SN: 9/7, p. 233), but the necessary funds have not been flowing very generously and international cooperation has not been too much in evidence.

The Rhine, sarcastically called the sewer of Europe, is particularly vulnerable to the international problem. Control of the river is fractionalized among four countries, Switzerland, France, Germany and Holland, and in Germany, among five different states. The present river commission has only an advisory function with the Council of Europe.

This was the situation when disaster struck the North Rhine in late June. Thousands of dead eels, bream, perch and roach first were seen floating belly-up in the vicinity of Lorelei Roch on a Thursday. The following day Westphalian state officials determined that some unknown substance was acting on the nerves that control fish respiration.

But it was not until Monday that North Rhine-Westphalian Agriculture Minister Dieter Deneke announced publicly that the river was virtually bared of fish, and that healthy test fish were dying seven minutes after being placed in the river. Deneke termed it the worst disaster in the history of the Rhine.

Although the oxygen content of the water dipped briefly, apparently because of dead fish putrefying, it soon rose again.

Once the word was out, local officials moved to warn the population. Police cars with loudspeakers warned people not to drink or bathe in the water, nor to touch dead fish. Farmers were advised not to graze animals near the river, and orders were given for gathering, burning and burying the fish.

The Dutch, alerted by the publicity, switched to emergency supplies in cities that get water from the Rhine, including Amsterdam and Rotterdam. Germans get water only indirectly from the Rhine, using nearby groundwater sources. Cages of test trout, a sensitive fish, are always kept in German reservoirs, and they showed no effect.

Dutch officials were the first to come up with an identification of the poison,

an insecticide called Endosulfan, manufactured by Farbwerke Hoechst in Frankfurt.

The insecticide, a chlorinated sulfate, has been made since 1956 and was developed because it is not harmful to bees.

Hoechst claims the substance is harmful to man and warm-blooded animals only in heavy concentration. The U.S. Department of Agriculture lists the insecticide as having a lethal dose for rats of 30 milligrams per kilogram, considerably higher than that of DDT. The U.S. Food and Drug Administration has a limit of two parts per million on fruits and vegetables and one part per million on alfalfa hay.

The concentrations of the insecticide must have been fairly heavy in the Rhine, since in the Koblenz area numerous reports were received of rats and ducks dying after drinking at the river.

The insecticide is sold as a powder, which the Hoechst company says wouldn't dissolve in the river, and as a liquid in xylan, often shipped by river barges that go past the spot where the dead fish first were noted. Shipped in metal containers sealed with lead, the poison could have fallen off one of 23 barges that went by the point during the period in question, but authorities had not located the culprit by late last week. The possibility was that a container fell overboard some time previously and finally corroded enough to release the insecticide. Misapplied agricultural spray was discounted because it was unlikely to have supplied the concentration observed: At least 200 pounds must have been introduced into the water.

Although the immediate poison danger has disappeared, there is a lingering possibility that high concentrations in backwaters will cause more trouble if the river floods. Deneke expects that four years will have to pass before the fish population—such as it is in the Rhine—recovers.

Another aftermath is unhappiness on the part of the Dutch over the system of control and warning of possible dangerous water dumps. So they are accelerating their program for automatic water testing, and pushing a more efficient warning system in conjunction with the Germans. Out of the urgency of the present disaster could come accelerated action, on a broader scale, on the general problem of European water pollution.