

ACTIVITY: Sea disaster
CASE: [GSAF 1941.12.07](#)
DATE: December 7, 1941
LOCATION: South Atlantic Ocean

“The assault on Pearl Harbor obscured a tragic scene in the South Atlantic which proved that sharks are never more dangerous than when large numbers of men are delivered to them from a sinking ship.

“A light British cruiser had been torpedoed ([This may be the Dundedin, GSAF 1941.11.24](#)). Seaman Albert E. Parton, a survivor, reported that as he crawled aboard a life raft he saw fins cutting the bloody water about him, swimmers being pulled grotesquely under the waves. Of the cruiser's complement of 450 men, only 170 escaped the torpedoing and the ‘frightful feast’ of the sharks.

“A government report of this came to the attention of Dr. Harold J. Coolidge, of Harvard University. Discussing the shark menace with his associates he conceived of the possibility of a chemical that would repel sharks. They were aware that fear of sharks was a morale problem among survivors in the Pacific, as well as among fliers. Surely, they reasoned, an attempt at some defense, would be worthwhile. Thus the project began. It was initiated by Coolidge, and undertaken by the Office Of Scientific Research and Development, through a contract with the Marine Studios. Interested parties were the Navy, the War Shipping Administration and the Air Force.

“In view of the fact that the war had forced the closing of the Marine Studios in Florida, research started at the Woods Hole Oceanographic Institution in Massachusetts, Burden's problem was to find the kind of bait that sharks would not attack, analyze it and extract from it the offensive chemical ingredients. If this could be done, it was presumably possible to combine these ingredients in a concentrated substance which, when released in the water by a sailor or airman, would act as a repellent.

“Staff members of the American Museum of Natural History in New York, searched the archives for data on this subject, but found nothing significant. Even ethnological literature dealing with the natives of islands in shark-infested waters proved barren of helpful facts or folklore.

“The first step was to tempt three-foot dog sharks with various kinds of poisoned meats. The experiments at first were at first, discouraging. The sharks readily seized meat containing the strongest poisons. It was immaterial that they died within half an hour after eating -- the point was they had swallowed the bait. Ultrasonics failed to dull their appetites. Different kinds of ink clouds failed for the reason that shark seeking food relies on his olfactory sense more than on sight. Even so, war gases did not deter them, nor a variety of stenches and irritants. While Burden had hoped that some of these substances might afford promising clues, he was not surprised that they did not and that weeks of work had ended in failure.

“The search however, continued. At last it occurred to Stewart Springer, senior scientist, to try decomposing shark meat as bait. Decomposed shark flesh from four to six days old

proved so distasteful to the Woods Hole dog sharks that a series of seventy-five tests were conducted on this bait alone. Pursuing the unknown repellent factor in it, the research staff allowed sharks to decompose in vats. The liquid was evaporated off slowly until all that remained was the evil-smelling residue. Samples of this were sent to Dr. David Todd, a chemist, who after some months determined the repellent agent was acetic acid, given off when ammonium acetate is dissolved in water.

“Meanwhile, Curator Arthur McBride, of the Marineland Biological Laboratory, found that copper sulfate was an even more powerful repellent than the extract from the decomposing shark meat. The scientists now had a double-barreled repellent composed of Springer's acetic acid and McBride's copper sulfate. It was called copper acetate and the results were spectacular.

“A meeting was called in Washington for the purpose of informing some twenty authorities of the progress in this peculiar war against sharks. In presenting his report, Chairman Burden claimed that copper acetate had a nearly perfect record of repellence, a statement which he supported with the convincing data supplied by McBride. Success seemed clearly enough indicated so that the Navy soon took over the research program. The repellent was quickly made up into cakes which were ordered by the services in tremendous quantities. Sealed in blue envelopes, suspended on the end of a ribbon and cemented to a life preserver, each packet gave positive protection from sharks for three to four hours.”

SOURCES: Felix Dennis, pages 19-20; A. Resciniti, page 90

