

Results of the test were reported by Alfred Piscatello, crew member aboard the *Angie* and *Florence*. The vessel had circled a school of mackerel in its long net, when sharks were observed circling near. Two blocks of the shark-chaser were sunk to a depth of 20 or 30 feet in a weighted container, and towed around the net. Additional chemical was spread on the water close to the net. The sharks headed for the catch, but when they came to the black "slick" on the water formed by the chemical they hastily turned tail and swam away.

One shark was caught in the net. Ordinarily this would have resulted in serious damage, for a netted shark lashes out furiously in efforts to escape. But this shark was very much subdued and was easily lifted out by hand.

Science News Letter, November 3, 1945

MARINE BIOLOGY

DDT Fails to Check All Ship-Fouling Organisms

► DDT, THOUGH proven able to prevent barnacles from growing on submerged steel plates, is nevertheless of little value as the main active ingredient for anti-fouling paints to be used on ships' bottoms, G. W. Seagren, M. H. Smith and Dr. G. H. Young of the Mellon Institute declare. (*Science*, Oct. 26). They base their conclusions on an eight-month series of experiments on the Florida coast, where the anti-fouling effectiveness of paints containing DDT and the time-honored anti-fouling copper compounds were compared.

In these experiments, as in earlier ones by other workers, the DDT did prove effective in preventing barnacles from taking hold on the steel test panels. The catch lies in the fact that barnacles are not the only organisms that foul up ships' bottoms. Other animals that help to form the troublesome crusts are included in several zoological orders: mollusks, annelids or jointed worms, hydroids, bryozoa and tunicates. The plant kingdom is represented in the growth complex by several kinds of algae or seaweeds. DDT had no measurable effect on any of these, save only barnacles, whereas a conventional-type copper-containing paint was effective against all of them.

The three researchers therefore conclude: "It thus seems unlikely that this toxicant (DDT) can effectively displace cupriferous and/or mercury pigments in the usual ships' bottom paints."

Science News Letter, November 3, 1945

ELECTRONICS

100,000,000-Volt Betatron

Details of this war-secret instrument are now revealed. It gives out X-rays of power never previously approached.

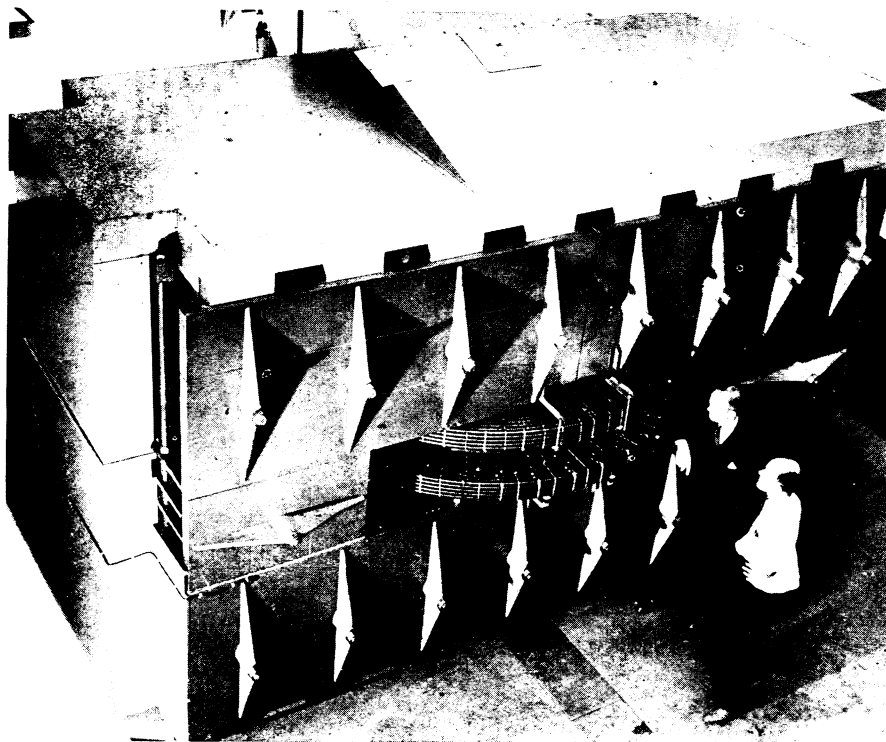
► DETAILS of the war-secret 100,000,000-volt electron accelerator, or betatron, were revealed at the General Electric Research laboratory in Schenectady to a group of newspaper science editors and technical writers who inspected the instrument.

"The new machine gives out X-rays of a power never previously approached," declared Dr. C. G. Suits, director of the laboratory, "and these will penetrate a thickness of metal considerably greater than the rays of our 2,000,000-volt industrial X-ray unit. But even more exciting to us are the possibilities that with the 100,000,000-volt electron stream that produces X-rays of the same energy we can produce other interesting forms of radiation. In fact, we have now arrived at the stage where we can generate in the laboratory radiations which formerly

were available only in the cosmic rays, and we are just passing the borders of an entirely new field of atomic research."

The principal part of the betatron is a huge electromagnet, made of 130 tons of laminated silicon steel. In a rectangular opening passing through the magnet from front to back are the pole faces, 76 inches in diameter, surrounded by large coils of insulated one-inch copper conductor. As electric current at 24,000 volts surges through these coils from a bank of condensers, the magnet is energized, the intense magnetic field being concentrated in the horizontal space between the pole faces.

The heart of the machine is a doughnut-shaped vacuum tube of glass. The doughnut has an over-all diameter of 74 inches, while the elliptical tube itself measures eight inches horizontally and



100 MILLION VOLTS—This machine will speed electrons to energies of 100,000,000 volts and produce X-rays of the same power. Dr. E. E. Charlton, left, and W. F. Westendorp are the two scientists at General Electric who have been responsible for the design and construction of this new super X-ray machine.