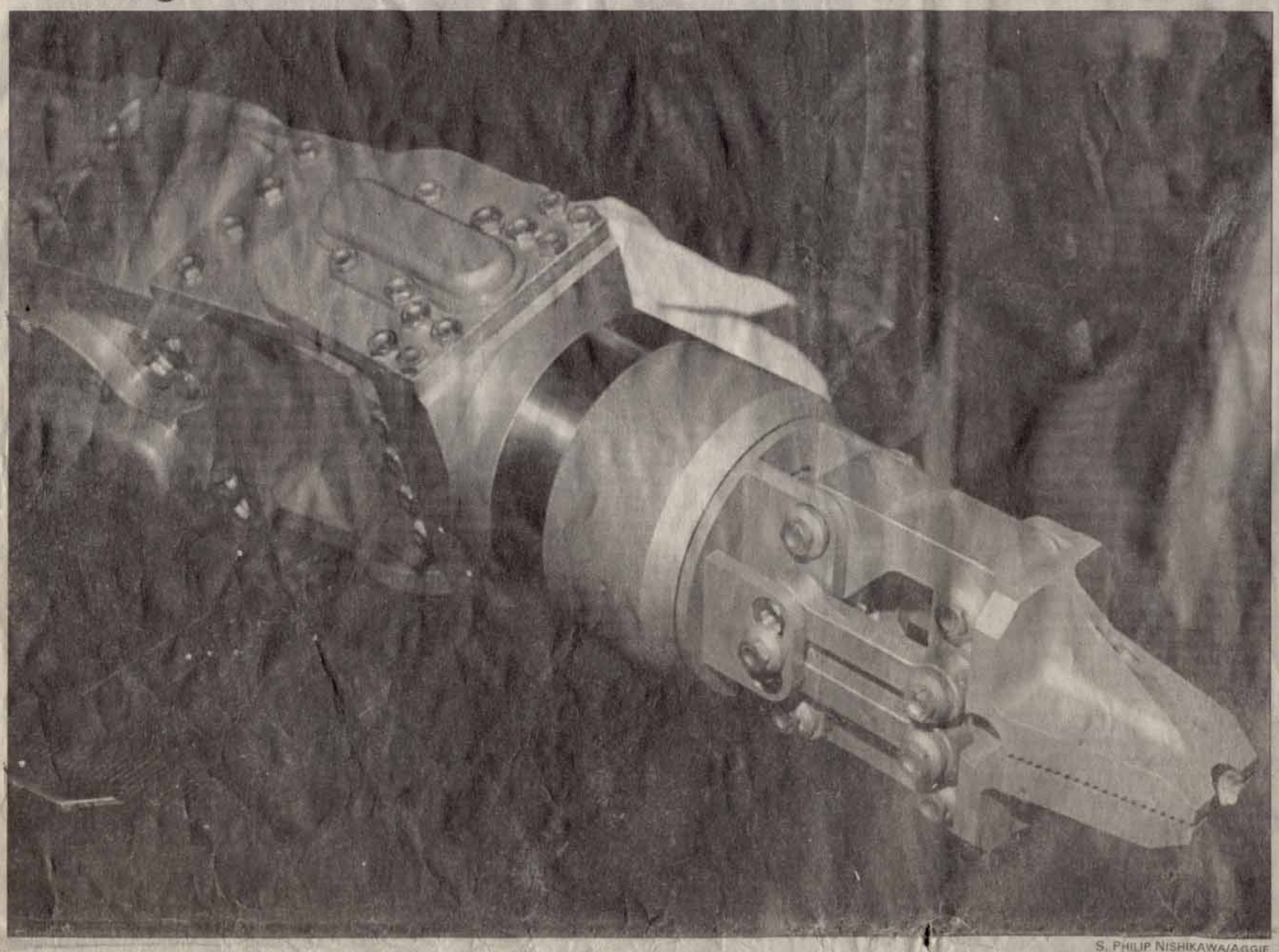
Reaching into the unknown



S. PHILIP NISHIKAWA/AGGIE

Telerobotic manipulators, also known as robotic arms, created by Davis-based Schilling Development, have traveled the depths of the ocean and aided in the exploration of the Titanic.

Davis firm designs arms for the future

By SARAH WYLIE
AGGIE NEWS WRITER

A little piece of Davis is now going where no man has gone before — to the intense pressure of the ocean depths and the potent atmosphere of radioactive sites.

The telerobotic manipulators, or robotic arms, designed and built by Davis-based Schilling Development, enable an operator to extend human dexterity into hostile environments through the operation of a mechanical reproduction of a human arm.

"The main thrust of the company at the beginning was to produce robots for underwater use," company president and co-founder Tyler Schilling said. "In the beginning we didn't have other possibilities in mind."

For Schilling Development, the beginning was an aluminum manipulator system called the HV, capable of handling an 80-pound load with a reach approximately the length of a human arm.

Schilling, who attended Davis Senior High School and then spent a semester at both Sacramento City College and American River College, founded Schilling Development in 1985 with current vice president of marketing Wesley Gerriets.

Within two years, the company became the leading supplier of robotic arms for undersea use and had introduced the Titan, one model of which was instrumental in the discovery and exploration of the Titanic.

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— Tyler Schilling
COMPANY PRESIDENT

Currently, Schilling Development has expanded to include models such as the Helios electric manipulator system, a design suited to perform anything from nuclear waste cleanup to nuclear reactor maintenance and inspection.

"There's lots of nuclear waste sitting around in the U.S., and you can't put people in there to look at it or move it or to clean out old nuclear plants that are being decommissioned," Schilling sales and marketing manager Lisa Nishikawa said.

"There's really a big demand for equipment like this that can go in with a real high capacity for lifting heavy weights, but is relatively easy to use," she added.

An operator controls the telerobotic manipulator arm through the movement of a smaller, replica arm, which the operator

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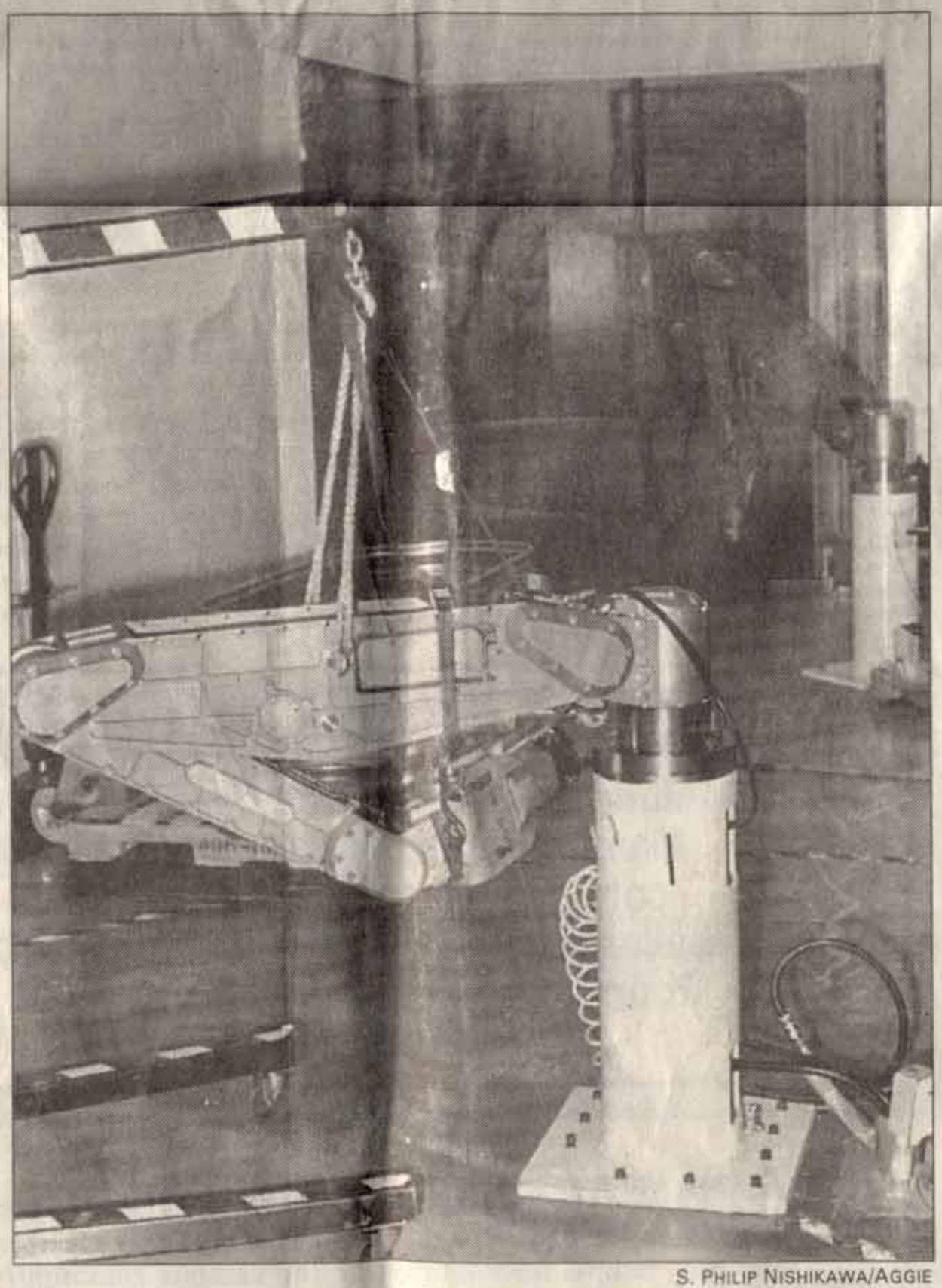

S. PHILIP NISHIKAWA/AGGIE

Schilling Development, whose president and co-founder, Tyler Schilling, attended Davis Senior High School, has become a leading supplier of robotic arms.

Arms

Cont. from front page

can easily clutch and maneuver with one hand. If the operator is unable to observe the full-size robotic arm directly, a video monitor provides a view of the work site.

Comparing the movement of Schilling's primarily hydraulic robotic arms to the familiar erratic motion of a bulldozer arm, Nishikawa pointed out the importance of a fluid, constant motion.

"It's a real art doing hydraulic activators so you get a fluid motion without a lot of stickiness," she said, explaining that the telemanipulator is able to operate incessantly due to its ability to receive and respond to numerous commands simultaneously.

"Most of our stuff is seriously overdesigned," she added. "It doesn't have to be light — it's not going on a plane or into space."

Pointing out that there are only 10 similar companies worldwide, Schilling stressed the limited market for robotic arms.

"We sell equipment to the offshore oil industry, scientific communities in underwater areas, and for repair and maintenance in nuclear facilities," he said, adding that a smaller percentage of the company's products serve more experimental endeavors, including outer space applications.

According to Schilling, the industry has been growing since it emerged in the 1950s, and the continuous need for nuclear waste cleanup promises a future for his company.