

Orbiting Satellites Could Aid Farmers

By Science Service

WASHINGTON — All corn fields, wheat fields, orchards and forests in the world could be counted in only a few hours from a number of satellites, set into near-polar orbits and spaced in an east-west direction.

Two scientists at the third Goddard Memorial Symposium of the American Astronautical Society here suggested that such a count would be an invaluable aid to agriculture.

Traveling at ground speeds of nearly 20,000 miles per hour, the satellites could record images of Earth strips about 50 to 100 miles wide, reported Dr. Robert N. Colwell, University of California, and Dr. J. R. Shay, Purdue University.

These future satellites could check on how and where crops and trees are growing, and if they are being attacked by insects, weeds or diseases.

By a system of catching and recording the energy waves that radiate or reflect from plants and soil around the world, sensory devices on satellites may well serve to keep constant tabs on vital farms and forests in a world seriously committed to provide adequate diet and materials for growing populations.

The scientists cautioned on certain difficulties to be surmounted before such an earth

orbital system would be effective. For instance, at altitudes of about 142 miles, all land features less than 50 to 100 feet high are likely to appear flat.

Also at that height, atmospheric haze particles could scatter the radiant energy from the fields and prevent accurate observations.

Light-sensitive instruments have been used on airplanes to gain large-scale information on crops, forests and land, the scientists explained.

The information is produced in photographic images that indicate what crops or trees are growing in particular areas, how vigorous the plants are, and how much certain crops could be expected to yield.

swords was a serious, ceremonious affair. Swordsmithery in Japan is 1000 years old. Swordsmiths often created their own steel in backyard mills from raw iron ore. Their manufacturing secrets and methods of tempering steel in water were well-guarded and handed down through generations.

"They just can't make swords like in the old days," said Hashioka. "Some secret technique is lost."

Items that intrigue sword collectors are determining the school of swordsmiths, if not the actual swordsmith, who hand-crafted the sword. Collectors are aware that there are many forgeries.

A Japanese sword expert, by studying its many features, is

Cars Pass Bikes

ROME—(AP)—Italy is finally manufacturing more automobiles than bicycles. Last year the total automobile production amounted to just over one million cars. Bicycle production was about 900,000.

Big Barge Planned By Fiji Officials

SUVA, Fiji—(AP)—The Public Works Department has announced plans to build a 110-foot-long landing barge, the largest vessel ever attempted in Fiji.

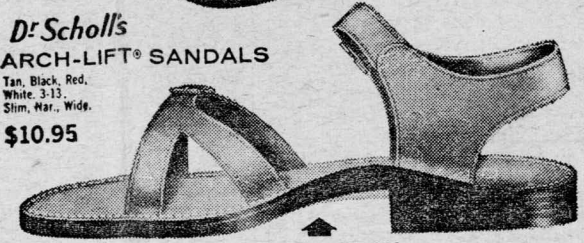
It will be used to carry heavy earthmoving equipment, heavy vehicles and construction materials between islands. A ramp will enable the barge to load and unload equipment at places without wharves.

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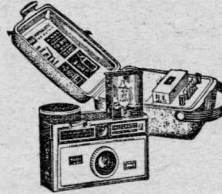
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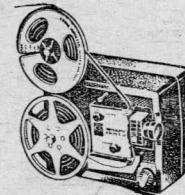
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