MISSISSIPPI DELTA WILDLIFE
DEVELOPING RESISTANCE TO PESTICIDES

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Mosquito fish from places having a history of treatment with pesticides were found to be resistant to several pesticides that are considerably more toxic than DDT. Some of these pesticides, in fact, have been in use for less than ten years.

Cricket frogs from areas heavily treated with DDT were found to tolerate concentrations which caused 100 per cent mortality in frogs having no prior contact with DDT. These DDT resistant frogs were later found to be quite resistant to aldrin.

DDT did not cause resistance to appear. However in the presence of DDT, the possession of resistance became a matter of survival or extinction. Resistant fish and frogs were able to survive and, therefore, produce a larger proportion of the succeeding generations.

If vertebrate resistance proves to be wide-spread, as suspected, this will certainly lessen anxiety for the welfare of wildlife in a world of increasing dependence on pesticides.

When Rachel Carson's book, Silent Spring, was published last fall, it rapidly climbed to a place at the top of the best seller list and became a subject of intensive discussion and controversy. The book turned out to be a strongly-worded indictment of modern agricultural chemicals and of the people who make and use them. The influence of the book can be measured by the fact that President Kennedy appointed a special advisory committee to prepare a report on pesticide problems, and as many as seven Congressional committees have taken testimony from a parade of witnesses, exploring possible needs for new and more stringent legislation governing the manufacture, distribution, and use of pesticides.

It is not my intention to take issue with all that is said in Silent Spring, for there is certainly no denying that agricultural chemicals have often been sold, handled, and used in an irresponsible manner. However, Miss Carson, in reporting her concern, has made some very serious accusations, many of which appear to have little basis in fact. For example, she has expressed great anxiety for the welfare of wildlife in a world of extensive chemical use. In fact, the very title of her book, Silent Spring, alludes to a hypothetical community having no birds, insects, or other animals as the catastrophic consequence of insecticide treatments.

Now, anyone who has witnessed the teeming abundance of life in the cotton-producing area of the Mississippi Delta must wonder about the extent of harm to wildlife, for here is one of the most heavily treated areas in the entire world. It has been quite literally drenched with organic insecticides for nearly 20 years. Yet, the area supports some of the best quail, turkey, waterfowl, deer, and fish populations to be found in North America.

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The Mississippi River Delta is the river delta at the confluence of the Mississippi River with the Gulf of Mexico, in Louisiana in the southeastern United States. It is a three-million-acre (4,700 sq mi; 12,000 km2) area of land that stretches from Vermilion Bay on the west, to the Chandeleur Islands in the east, on Louisiana's southeastern coast. It is part of the American Mediterranean Sea and the Louisiana coastal plain, one of the largest areas of coastal wetlands in the United States. The Agricultural pesticide contamination of sediments from five Mississippi Delta oxbow lakes and their effects and bioavailability to Hyalella azteca were assessed during a low-application season-autumn. Three reference oxbow lakes were located in the White River National Wildlife Refuge (WRNWR), Arkansas and two impaired lakes, according to the US Environmental Agency Sect. 303 (d) Clean Water Act, were located in Mississippi. Surface sediment (top 5 cm) was collected at three sites within each lake and analyzed for 17 current and historic-use pesticides and metabolites. Chronic 28-day H. azteca