AN AMERICAN KESTREL KILLED BY ORGANOCHLORINE PESTICIDES IN DUTCHESS COUNTY, NEW YORK

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On 8 May, 1980 a dead American Kestrel *(Falco sparverius)* was found near Poughquag, Dutchess County, by children. The bird was given to personnel of the New York State Department of Environmental Conservation. It was placed in a plastic bag and frozen until the carcass was necropsied, upon arrival, at the Wildlife Pathology Unit, on 27 June, 1980.

On post-mortem examination, the bird was found to be an emaciated adult male. There was no evidence of trauma, parasitic infestation, or infectious diseases causing the mortality. The pectoral musculature and testes were atrophied and there was no visible fat deposits. The bird's emaciation, without an obvious underlying cause, suggested organochlorine pesticide poisoning (Sileo *et al.,* 1977; Kaiser *et al.,* 1980). Therefore, the brain was submitted to Raltech Scientific Services, Madison, Wis. for analysis of chlorinated hydrocarbon pesticides and PCB's (U.S. Food and Drug Administration, 1968; Heath and Hill, 1974).

The brain contained the following residue levels (wet weight; parts per million = ppm): p,p' DDT, 16.8; o,p' DDT 0.63; DDD, 4.67; DDE, 110.0; total PCB's, 1.67 and Dieldrin, 4.86. Traces of Lindane, hexachlorobenzene, and Endrin were also found.

Stickle *et al.* (1969) have found that brain Dieldrin levels of 4 or 5 ppm (wet weight) can be fatal in birds. Porter and Wiemeyer (1972) found that two of 14 male American Kestrels died after 14 and 16 months on a diet containing low levels of DDE (2.8 ppm; wet weight); the brains of the birds contained 213 ppm and 301 ppm of DDE but less than 1.7 ppm of combined DDT, DDD and Dieldrin (wet weights). Stickle *et al.* (1970) made an index to aid in determining if brain levels of DDT and its metabolites (DDD; DDE) may be fatal to a bird. In this system 1 ppm of p,p' DDT equals 5 ppm of DDD or 15 ppm of DDE in the brain. Each ppm (wet weight) of p,p' DDT in the brain equals one DDT equivalent. Using this index, our kestrel's brain contained 25 DDT equivalents (o,p' DDT not included). According to Stickle *et al.* (1970) most DDT killed birds have indexes between 20 and 80 DDT equivalents. Therefore, the bird had dangerous levels of both Dieldrin and DDT and its metabo-

lites in its brain, and was judged to have died from the effects of one or both of these pesticides.

Nearly twenty years ago Rachel Carson (1962) warned the public, in *Silent Spring,* about the threat of pesticides like DDT and Dieldrin to birds and other wildlife. In October 1970 New York State Department of Environmental Conservation Commissioner Henry Diamond signed an executive order stopping all uses of DDT and most applications of Dieldrin in New York State as of 1 January, 1971. Nevertheless, this case indicates that these persistent toxicants remain a problem for some bird species, at least locally, and further investigation is needed into the origin of the pesticides, which may have been picked up by the bird outside New York State. However, Hudson Valley orchards are suspected sources because of past heavy applications of both DDT and Dieldrin (Johnson *et al.,* 1976), and further research is needed into the relationship of pesticides in orchards to the health of birds.

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NEWS RELEASE –

COLOR-MARKED BRANT

Wildlife biologists with the New York State Department of Environmental Conservation have been banding and color-marking Brant on their Long Island wintering grounds. In cooperation with Canadian scientists, they are studying the migration routes to their Arctic breeding grounds. Approximately one thousand Brant have been sprayed this year. The dyed feathers will be replaced during this summer's postnuptial molt.

Any persons observing color-marked Brant should note the following:

- date, time and place
- color and part of body dyed
- number in flock
- age-class (if known) of individual
- age-class composition of flock (if known)

Information should be sent to:

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