Read By Title ☒ Yes ☐ No Submitted for publication to American Journal of Pathology

Title & Authors The Association of Transplacental and Mammary Movement of PCBs with Infant Morbidity and Mortality. D.A. Barsotti, B.S., L.A. Carstens, B.S. and J. R. Allen* Ph.D. University of Wisconsin, Madison, Wisconsin

Abstract
Infant rhesus monkeys of mothers who had received 2.5 and 5.0 ppm polychlorinated biphenyls (PCBs mixture (Aroclor 1248) in their diets prior to and during gestation were more frail and had correspondingly lower birth weights than controls. Skin biopsies taken following birth showed detectable levels of PCB. Tissue analysis on a stillborn infant revealed the presence of PCB in all tissues, many of which were in excess of 50 µg/g tissue. The six live births (5 from mothers receiving 2.5 ppm and 1 from the 5.0 ppm mothers) exhibited hyperpigmentation of the skin, being particularly apparent on the head, abdomen, and extremities but absent from the face. With time the infants' tissue levels of PCB increased due to the ingestion of milk from their mothers. Milk samples obtained from these lactating females contained in excess of 150 ng PCB/g milk. Within 2 months, the infants began showing signs of PCB intoxication that increased in severity with exposure time. They developed acne, loss of eyelashes and a decided swelling of the eyelids. Within 4 months following birth, 3 of the 6 infants had died as a result of PCB intoxication. At necropsy the animals showed decided hypocellularity of their thymuses and bone marrow. The 3 surviving animals were weaned at 4 months of age and are presently showing signs of recovery from PCB intoxication. These data indicate that PCB crosses the primate placenta and collects in fetal tissue. This PCB is likely responsible for the small birth weights and hyperpigmentation of the exposed infants. In addition, it has been demonstrated that sufficient PCB may be obtained from lactating mothers to produce morbidity and mortality in the offspring. (Supported in part by U.S. Public Health Service grants ES-00958 ES-00472, and RR-00167 from the National Institutes of Health, and the University of Wisconsin Sea Grant Program.