Rose et al. (1970) reported an LC_{50} of 2,800 mg/m^3 (95% C.I., 2,679-2,926 mg/m^3, 2,444, 2,339-2,554 ppm) for a 4 h exposure in male Swiss albino mice. COHb was not determined.

3.1.3. Guinea Pigs

Rose et al. (1970) reported a LC_{50} of 6550 mg/m^3 (95% C.I., 5509-7788 mg/m^3, 5,718, 4809-6799 ppm) for 4 h of exposure in Hartley guinea pigs. The COHb in animals that had died was between 57% and 90%.

The solid line was calculated by Probit analysis from the data in E.I. du Pont de Nemours and Co. (1981). The slope of this line indicates a time scaling exponent of n = 2.6. Analysis of all data yielded a value of n = 2.8. The LC_{50} values are taken from Table 2-12.

3.2. Nonlethal Toxicity

A large number of studies investigated nonlethal effects of single and repeated CO exposures in animals (see WHO [1999a] for review). Reported here are only studies that support or add information to the effects seen in humans because these studies were considered most relevant. These effects include syncope-like observations and behavioral effects in monkeys, effects on heart function in dogs, as well as developmental and reproductive toxic effects in different species.

3.2.1. Monkeys

Purser and Berrill (1983) studied the behavioral effects of CO exposure on cynomolgus monkeys (three male animals 4-5 years old). The basic behavioral model consisted of an individual monkey placed in a chamber with a lever press at one end a reward (chocolate candy) dispenser at the other. At 5-min intervals throughout the test session a buzzer was sounded and a light flashed over the lever. If the monkey pressed the lever within a 1-min period, a candy was presented in the dispenser. The monkey then moved the length of the chamber to pick up the candy. The major performance parameter measured was the time from the animal releasing the lever to its first touch of the dispenser, that is, the time taken to traverse the chamber. Each session consisted of the following stages: (1) a 25-min pre-exposure period during which baseline CO_2 production and behavioral task performance times were established, (2) 2.5% CO was introduced into the chamber at a sufficiently high flow rate to increase the concentration to 900 ppm within 1 min, (3) CO at 900 ppm was maintained for 30 min, during which the effects on clinical condition, CO_2 production and behavioral task performance were examined, (4) the chamber was flushed of CO, decreasing the concentration to less than 100 ppm within 4 min, (5) animals were main-