1386. METABOLISM OF LYSERGIC ACID DIETHYLAMIDE. E. S. Boyd (intr. by E. A. Maynard). Div. of Pharmacology and Toxicology, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y.

Lysergic acid diethylamide (LSD-25) labeled with carbon 14 has been administered i.p. and i.v. at 1 mg/kg to rats and the levels of radioactivity in the various tissues determined at intervals from 5 min to 12 hr. Similar distribution pictures are obtained with either route, with relatively high levels of radioactivity in liver, kidney and lung, and low levels in blood, fat, and brain. The half-time of the radioactivity in the blood is about 20 min. The levels in the tissues fall at about the same rate as the blood. Most of the administered radioactivity accumulated rapidly in the G.I. tract since 60-80% of the administered dose is excreted in the bile in 3 hr. Only 3-5% of the labeled compounds in the bile are absorbed from the G.I. tract. Preliminary experiments in cats indicate a similar distribution picture. This picture is also similar to that found by Stoll et al. (Experientia 11:396, 1955) in mice. Studies in the rat at 100 and 10 μg/kg show the same pattern and it may be inferred that the same pattern would also be found at 1 μg/kg, which is within the human dose range. About 20% of the radioactivity in the blood is in the cellular fraction and 40-70% is bound to plasma proteins; the percentage bound decreases with time. The radioactivity excreted in the bile represents at least 4 compounds, none of which seem to be identical with the metabolite of LSD-25 found in vitro by Axelrod et al. (Ann. New York Acad. Sci. 66:435, 1957).

1387. USE OF RADIO-OPAQUE MEDIUM IN STUDY OF INTRAVASCULAR COAGULATION AND CLOT LYSIS. Paul W. Boyles (intr. by Ralph Jones, Jr.). Miami Heart Inst. and Dept. of Medicine, Univ. of Miami School of Medicine, Miami, Fla.

The induction of radio-opaque blood clots in partially occluded veins in dogs was employed in a method devised for the serial observation of intravascular coagulation and clot lysis in the intact animal. Studies on the formed elements and on the coagulation factors in the blood will be reported in relation to the effects of intravascular clot formation and the subsequent administration of activated human fibrinolysin. The action of fibrinolysin on freshly formed (1-hr) clots was noted to be more pronounced than on 24-hr-old clots. In vitro studies on the inactivation of fibrinolysin will also be presented.

1388. EFFECT OF DIETARY PROTEIN ON MORTALITY OF X-IRRADIATED MICE. W. T. Bradner and M. H. Hatch (intr. by D. A. Clarke). Exptl. Chemotherapy Div., Sloan-Kettering Inst., New York City, and Biology Dept., Brown Univ., Providence, R. I.

Previously reported experiments in which mice X-irradiated with 600 r were maintained on diets varying in protein content suggested a protective effect by a high protein diet (54% casein). Additional experiments have been performed to establish the significance of the mortality figures first observed. The 30-day mortalities for BUB strain mice maintained before and after 600 r X-irradiation on 54, 18, or 6% casein diets (varied against corn starch with fat, salts, and vitamins constant) were 33, 57, and 88%, respectively. With 18% casein considered as "normal" protein, mortality was significantly decreased among mice fed the high protein diet and increased among mice fed the low protein diet. The high-protein fed animals which manifested bacteremia in these experiments seemed to have a greater tendency to clear the blood and survive. Since mortality of mid-lethally X-irradiated mice is ascribed largely to bacteremia and since changes in dietary protein have frequently been shown to alter the resistance of animals to infection, it is suggested that the protective effect may be due in part to enhanced ability of the mice fed 54% casein to cope with bacterial invasion.

1389. PHYSIOLOGICAL DISPOSITION OF METHITURAL IN MAN. Leonard Brand,* Lester C. Mark, Peter Dayton,* Dolores Taller* and E. M. Papper. Dept. of Anesthesiology, Columbia Univ. and New York Univ. Research Service, Goldwater Memorial Hosp., New York City, and Lab. of Chemical Pharmacology, Natl. Heart Inst., Bethesda, Md.

Plasma decay curves for methitural (Neraval) in man showed that after diffusion equilibrium was established the rate of disappearance from plasma was from 15 to 20% per hr. The fat/plasma partition ratio determined in surgical patients several hours after the administration of methitural and the lipid solubility of the compound measured in vitro were both of the same order of magnitude as with thiopental. Changes in electrical activity of human brain appeared within 15-30 sec after i.v. injection of methitural, suggesting prompt transit across the blood-brain barrier. This was verified by the finding in dog brain of appreciable amounts of drug 30 sec after i.v. administration. Blake and Perlman (J. Pharmacol. and Exper. Therap. 117:287, 1956) found in dogs and rats that methitural is localized in fat and metabolized by the liver considerably more rapidly than is thiopental. However, in man there is no important difference between the physiological disposition of methitural and other thiobarbiturates in clinical use.