

membrane was covered by a thin layer of stratified epithelium continuous with that covering the rest of the body, but much thinner. The inner surface of the membrane was covered by a single layer of cuboidal mesothelial cells (Fig. 2), continuous with the lining of the peritoneal cavity. The space between the two layers of surface cells was occupied by collagenous tissue, containing lymphatic and small blood vessels.

1968 #3

LACK OF EFFECT OF M-99 IN THE DOGFISH AND LOBSTER

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M-99 (Etorphine or 19-Propylorvinol) is one of a series of potent analgesics derived from thebaine. This compound has been especially useful for the capture of large wild ungulates. For example, the dose used for the capture of white rhinoceros ranged from 0.13 to 11.8 $\mu\text{g/kg}$ body weight (Fed. Proc. 26:1251, 1968). We have studied the effects of M-99 in the dogfish (Squalus acanthias) after i.v. or intra-arterial administration and in the lobster (Homarus americanus).

M-99 was injected into six male dogfish at three different dose levels—0.1 mg/kg, 1 mg/kg, and 3 mg/kg and the overt behavior of the fish was observed intensely for 3 hours and less frequently for 4-8 days. The dogfish appeared normal at all times, and were never tranquilized, sedated or excited during this observation period. M-99 also had no effects in lobsters in doses up to 1 mg/kg. A phylogenetic study of the site of action of M-99 would be of interest.

1968 #4

ANATOMICAL OBSERVATIONS IN THE HARBOR SEAL, Phoca vitulina

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During the course of the summer opportunity was provided to obtain plastic casts of various portions of the circulatory system in four seals. We injected Batson's corrosion compound and macerated the tissues by immersion in 20N KOH, for 48 to 72 hours. Casts were obtained of the cerebral arterial tree, the coronary circulation and the systemic venous bed. The cerebral arterial and coronary circulations had no unusual distinctive features as compared to other mammals. Figure 1 illustrates a cast of the systemic venous bed obtained by injection into the superior vena cava. The casting medium filled retrogradely two conspicuous subdural veins, the stellate plexuses of both kidneys, the double inferior vena cava and the enormous hepatic sinus (HS). These findings confirmed previous descriptions of the venous system in seals by Harrison et al. (Proc. Zool. Soc. London 126:205-33, 1956).

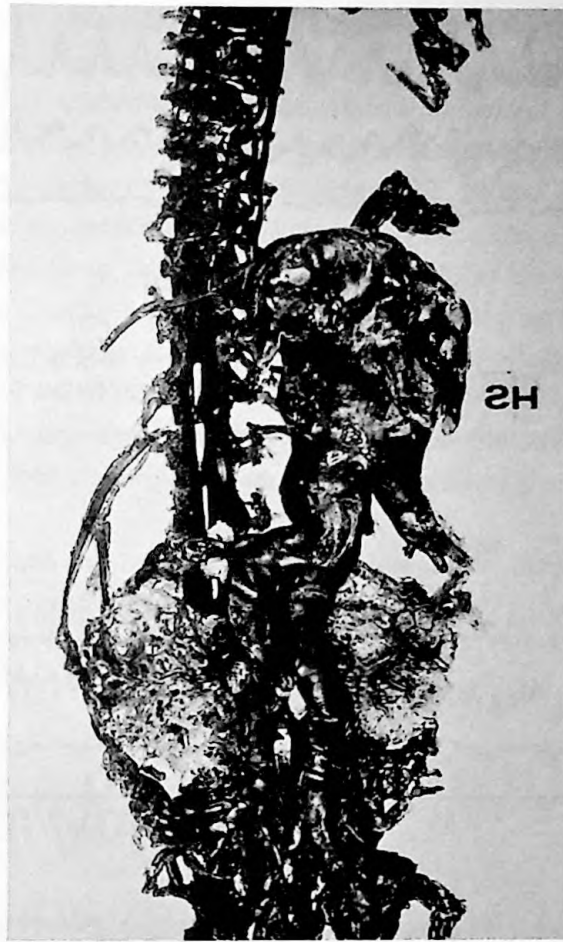


Figure 1

1968 #5

PULMONARY CIRCULATION DURING SIMULATED DIVING IN THE HARBOR SEAL, Phoca vitulina

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The present study was undertaken to measure intravascular pressures and blood flow in the pulmonary circulation of seals during diving.

Experiments were performed in nine animals, approximately four months old and weighing about 25 kg. In three seals, premedicated with Sernylan® (0.3 mg/kg), thoracotomy was done under sterile conditions using local anesthesia (2% xylocaine). An electromagnetic flowmeter (Biotronics) was implanted around the main pulmonary artery and polyethylene catheters were implanted in the main pulmonary artery and left atrium. The animals resumed activity on the second post-operative day and records of pressure and flow were obtained during the subsequent five to ten days (Fig. 1). "Diving" responses, characterized by sudden and profound bradycardia, could be obtained with ease by applying a cold, wet towel to the snout of the animal. The average duration of the stimulated dive was 60 seconds, but it could be prolonged without difficulty to