tained release of catecholamines normally observed during hemorrhagic hypotension. Since hydrogen ion promotes the adrenomedullary synthesis of catecholamines, reduction of available hydrogen ion during alkalemia may suppress the rate of synthesis of epinephrine, resulting in reduced plasma levels of epinephrine. (*Fiorica, V., and others: Influence of Blood pH on Adrenomedullary Response to Hemorrhage, Amer. J. Physiol. 217: 1211 (Oct.) 1969.*)

CSF BUFFERING CAPACITY The *in-vivo* buffering capacity of CSF obtained from the cisterna magna and that of arterial blood were determined in anesthetized dogs during acute, steady-state CO_2 retention. Cerebrospinal fluid and blood samples were withdrawn after 90–120 minutes at each of several stepwise increments in inhaled CO_2, and *p*H, P_{CO_2} and HCO_3^- were measured. *In-vitro* buffering was studied by equilibrating the CSF samples with CO_2. Both Astrup and Van Slyke methods of gas measurement were used; the results of the two methods were comparable. Buffering capacity was expressed as $\Delta pH/\Delta \log P_{CO_2}$ and as $\Delta HCO_3^-/\Delta pH$. *In-vitro* CSF had virtually no buffering capacity. CSF *in vivo* had a $\Delta pH/\Delta \log P_{CO_2}$ value of 0.59 and a $\Delta HCO_3^-/\Delta pH$ value of 28.7 slykes (slyke $= \Delta HCO_3^-/\Delta pH$). Corresponding values for blood were 0.75 and 10.4. *In vivo*, CSF is buffered significantly more efficiently than blood because there is a greater increment of bicarbonate in CSF. Neither intraventricular ouabain nor intraventricular acetazolamide had any significant effect on CSF buffering. Severe hypoxia greatly diminished buffering capacities of both CSF and blood. (*Lee, J. E., and others: Buffering Capacity of Cerebrospinal Fluid in Acute Respiratory Acidosis in Dogs, Amer. J. Physiol. 217: 1035 (Oct.) 1969.*)

LACTATE: PYRUVATE RATIOS Studies were performed in trained conscious dogs with intravascular catheters permanently implanted. With the dogs in a basal state, concentrations of lactate (L) and pyruvate (P) in arterial blood fluctuated widely from day to day, whereas the L:P ratio remained relatively constant. By contrast, a decrease in the tissue oxygen supply induced by severe chronic anemia increased the arterial blood L:P ratio, with only random changes in the lactate and pyruvate concentrations. When systemic oxygen consumption was increased acutely by muscular exercise, cardiac output increased and changes in the blood L:P ratio were small and not consistent among the dogs. However, when the oxygen supply to the tissues was limited by anemia, L:P ratios increased during exercise, and the degree of the increase was proportional to the severity of the anemia. These results suggest that changes in blood L:P ratios during exercise are related specifically to tissue oxygen supply. (*Neill, W. A., and others: Effect of Decreased O_2 Supply to Tissue on the Lactate: Pyruvate Ratio in Blood, J. Clin. Invest. 48: 1862 (Oct.) 1969.*)

COMPUTER DIAGNOSIS Since we now have computers which operate in the time-sharing mode, it is possible to program an automated system which can assist a physician in solving clinical problems. A teletype terminal is linked to a time-sharing computer programmed to evaluate clinical and laboratory information from patients with acid–base abnormalities. The program checks the data for evidence of internal consistency and asks for additional information as needed to solve acid–base aspects of the problem. If enough information is provided, the program will produce an evaluation note designed to review with the physician the pathology and physiology of the disorder and to assist him in its management. If the input data are not complete, the program draws the most useful conclusions possible based on whatever data are provided, specifies limitations which pertain to these conclusions, suggests further studies designed to circumvent the limitations and, while awaiting results, suggests appropriate interim therapeutic modalities. The time required to enter a patient's data and to print the evaluation rate is about four minutes; the cost is comparable to the costs of many other presently available laboratory tests. (*Bleich, H. L.: Computer Evaluation of Acid–Base Disorders, J. Clin. Invest. 48: 1689 (Sept.) 1969.*)