

controlling distribution of pulmonary blood flow. (Pain, M. C. F., and West, J. B.: *Effect of the Volume History of the Isolated Lung on Distribution of Blood Flow*, *J. Appl. Physiol.* 21: 1545 (Sept.) 1966.)

**FIBROTIC LUNG DISEASE** Subjects with diffuse pulmonary fibrosis or granulomatous disease do not generally have disease specific functional pulmonary impairment. In sarcoidosis the duration of the disease is correlated with severity of airway obstruction. In nonspecific interstitial fibrosis often only diffusion is impaired. Nearly all subjects with clubbing have arterial hypoxemia, but the converse is true in less than 40 per cent of subjects. Right heart failure refractory to therapy is seen as a pre-terminal event in about 20 per cent of these subjects. Reticular as opposed to nodular patterns on chest films are associated with greater physiologic impairment. (Sharp, J. T., and others: *Clinicophysiological Correlations in Diffuse Pulmonary Fibroses and Granulomatoses*, *Amer. Rev. Resp. Dis.* 94: 332 (Sept.) 1966.)

**GRAM-NEGATIVE PNEUMONIA** In a study of 522 autopsies it was found that 7.9 per cent had a necrotizing lung lesion characteristic of *Pseudomonas*. Compared to a control group, these patients had received significantly more aerosols (possibly contaminated), penicillin, anti-gram positive agents, broad spectrum antibiotics and steroids. Shock and anemia had also been significantly more frequent in these patients. (Pierce, A. K., and others: *An Analysis of Factors Predisposing to Gram-Negative Bacillary Necrotizing Pneumonia*, *Amer. Rev. Resp. Dis.* 94: 309 (Sept.) 1966.)

**PULMONARY PAPILLEDEMA** Physiological abnormalities resulting from profound disturbances of respiratory function include retention of carbon dioxide and anoxia. Increased carbon dioxide has a much greater effect upon cerebral and ocular blood flow than does decreased oxygen saturation. It has been suggested therefore, that hypercapnia

primarily determines the ocular changes in pulmonary insufficiency. The mechanism for the changes in circulatory dynamics is believed to be a prompt decrease in cerebrovascular resistance followed by a subsequent increase in cerebral and ocular blood flow. This sustained increase in flow is associated with dilatation and increasing tortuosity of the retinal vessels. Papilledema may develop as the CSF pressure becomes elevated and as vascular permeability increases. When the ventilatory failure is chronic or develops over a long period of time with gradual increases in the arterial carbon-dioxide levels, the patient may be entirely asymptomatic and present only vague complaints of fatigue and somnolence. It is in this latter group that far-advanced retinopathy with papilledema would most likely be found. It is particularly in this group that primary intracranial disorders, especially space-occupying lesions, may be suspected because of the presence of papilledema; the respiratory symptoms become minimal. Awareness of this clinical fact and consideration of blood-gas abnormalities in the diagnostic search for the etiology of papilledema may spare the patient from costly, time-consuming, and often hazardous diagnostic procedures. The retinopathy may be reversed by improvement in ventilation. (McCormack, W. M., and Spalter, H. F.: *Muscular Dystrophy, Alveolar Hypoventilation, and Papilledema*, *J.A.M.A.* 197: 957 (Sept.) 1966.)

**BLOOD GAS ANALYSIS** On the basis of a laboratory evaluation of the Radiometer system for determining  $P_{CO_2}$  of blood by the interpolation method, several suggestions on technique are made which resulted in a high degree of accuracy and reproducibility. When  $P_{CO_2}$  of tonometer equilibrated blood was measured with both interpolation technique and a  $CO_2$  sensitive electrode no systematic difference was found between the two methods, but the random error for the  $CO_2$  sensitive electrode was slightly smaller. (Kelman, G. R., Coleman, A. J., and Nunn, J. F.: *Evaluation of a Microtonometer Used With a Capillary Glass pH Electrode*, *J. Appl. Physiol.* 21: 1103 (May) 1966.)