

and oxygen transfer factor may limit exercise capacity in disease. This relationship has been explored in 11 normal subjects, 18 patients with sarcoidosis, and eight patients with interstitial lung disease by varying the inspired  $O_2$  concentration at standard work loads and following the arterial  $O_2$  saturation by means of an ear oximeter.

In normal subjects the relationship between inspired  $PO_2$  or alveolar  $PO_2$  and arterial saturation is a curve of increasing steepness at lower  $O_2$  pressures. In all but one of the patients with sarcoidosis a curve indistinguishable from normal was found. The radiographic appearances in these patients ranged from hilar gland enlargement to diffuse changes in the lungs. In all the patients with interstitial disease, the curve was displaced to the right, and it was possible in six patients to determine the increase in inspired  $PO_2$  necessary to maintain the resting  $O_2$  saturation unchanged.

This procedure may provide the basis for a simple bloodless test for the detection of the onset of impairment of oxygen transfer in disease.

#### HYPERVENTILATION OF PREGNANCY

J. E. UTTING and E. T. FADL In pregnancy, and more especially in labour, there is a considerable hypocapnia due to active pulmonary hyperventilation. There is, however, a concomitant metabolic acidosis, and arterial blood  $pH$  usually lies within the limits of normality for the non-pregnant state.

Though there is general agreement in the literature that blood lactic acid concentrations rise in hypocapnia

and alkalosis there is no agreement on the degree of this rise nor on the mechanism of its production. Pregnancy and labour provide a unique opportunity to study this problem, since there is prolonged hypocapnia without alkalaemia in a physiological context.

In this study blood lactate concentration has been measured in samples of arterialized venous blood using an enzymatic method in pregnant patients, some of whom were in labour, and these values were compared with those from volunteers engaging in active hyperventilation for short periods.

The results indicate that the physiological hypocapnia of pregnancy is accompanied by near normal concentration of lactic acid and confirms suggestions that the respiratory muscles are unlikely to be a major source of this acid.

#### INTRA-BRONCHIAL COLOUR PHOTOGRAPHY

P. STRADLING The time needed to ensure the best conditions for photography is considerably longer than is usually taken for routine bronchoscopy. Therefore, under general anaesthesia with relaxation, special methods of ventilation must be used to ensure oxygenation and low  $CO_2$  levels. Some methods used at present to achieve satisfactory photography and adequate ventilation are critically discussed together with suggestions for future improvement. The paper is illustrated by photographs of endo-bronchial anatomy and pathology to demonstrate their teaching value.