shortness of breath. On examination a moderate cardiac enlargement with mitral stenosis and auricular fibrillation was found. The CO_2 of the arterial plasma was thirty-eight volumes per cent. Five days later when he was much improved the CO_2 of the arterial plasma had increased to forty-nine volumes per cent.

The results of this study seem to indicate that when the minute volume of air respired at rest is definitely above normal (10 to 12 liters) the plasma CO_2 is low. With improvement in the circulation and the accompanying fall in the minute volume the CO_2 of the arterial plasma shows a definite increase toward the normal.

10 (1470)

The total carbonate content of the arterial and venous plasma in patients with chronic pulmonary emphysema.

By **R. W. SCOTT** (by invitation).

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This study represents six determinations of the total carbon dioxide content of the arterial and venous plasma over a period of six months on three patients with chronic pulmonary emphysema of the so-called "large lunged" type. The patients were males between forty-five and fifty years of age with definite enlargements in all diameters of the thorax, particularly the anterior-posterior diameter; thus presenting the typical "barrel shaped" chest. They were singularly free from cardio-renal disease so that all their symptoms and signs were attributed to the disturbance in the respiration resulting from the degenerative process in the lung. From observations to be reported in detail elsewhere, it has been found that this type of patient will tolerate an unusually high percentage of CO_2 in the inspired air with little increase in the minute volume over that at room air and without any subjective symptoms of distress. As a rule such patients breath eight to ten per cent. CO_2 for from ten to fifteen minutes with no apparent discomfort. That is, one man who has been under observation for the past nine months had a

respiratory rate of twenty-two and a minute volume of ten liters while breathing room air. During an experiment in which air containing 11.4 per cent. CO_2 was inspired for a period of six minutes, the respiratory rate remained at twenty-two and the minute volume increased to only fourteen liters. At this high concentration of inspired CO_2 the patient complained of a little dizziness and nausea which disappeared when he was allowed to breath room air for a few minutes.

In an attempt to explain the unusual tolerance to CO_2 in the inspired air shown by the type of case described, the CO_2 content of the arterial and venous plasma of three patients have been determined and found to be consistently above normal as indicated by the data in the accompanying table.

TABLE.

THE TOTAL CARBONATE CONTENT OF THE ARTERIAL AND VENOUS PLASMA IN THREE PATIENTS WITH CHRONIC PULMONARY EMPHYSEMA.

CO_2 reduced to 0°–760 mm. in 100 c.c. plasma.

Arterial	Venous	Arterial	Venous
c.c.	c.c.	c.c.	c.c.
76.1	82.7	80.2	88.4
72.4	78.4	70.2	76.4
71.0	76.0	74.5	80.2

II (1471)

Concerning the influence of antipyretics on the acuity of hearing.

By D. I. MACHT, J. P. GREENBERG and S. ISAACS.

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In connection with an extensive pharmacological and psychological study of antipyretic drugs, the effect of same was tried on the acuity of hearing. Experiments were performed on normal human subjects, and in a few cases on persons suffering with mild deafness. The tests were made, by means of a watch, in a quiet room, with the subject in a sitting position; and all necessary controls were carried out for the elimination of error. In every experiment the normal limit of hearing was first determined; the drug to be studied was then administered by mouth; and the