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

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Concerning the influence of antipyretics on the acuity of hearing.

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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

acuity was afterwards tested at definite intervals of time. Only therapeutic doses of the drugs were administered. The following substances were studied: acetanilid, acetphenetidin, antipyrin, pyramidon, lactophenin, salol, aspirin, quinin, sodium salicylate, and "melubrin." After studying the effects of individual drugs, certain combinations were administered. The following were among the combinations studied: acetanilid plus sodium bicarbonate, acetphenetidin plus salol, acetanilid plus salol, acetanilid plus acetphenetidin, antipyrin plus aspirin, and antipyrin plus salol.

The results obtained were both interesting and unexpected. It was found that some drugs decrease the acuity of hearing while others increase it. Furthermore, it was found that certain combinations of antipyretics produce synergistic effects not explainable by the simple arithmetical sum of the effects produced by the components individually. Among the agents found to decrease the acuity of hearing were acetanilid, salol, and aspirin. Among those found to increase the hearing were antipyrin, pyramidon, and small doses of quinin. Among the most remarkable combinations studied were those of acetanilid plus sodium bicarbonate and acetanilid plus salol. It was established that whereas acetanilid given alone decreases the acuity of hearing, and ordinary doses of sodium bicarbonate given alone produce no change; a combination of the two produced a definite improvement in the acuity of auditory perception. Again, whereas acetanilid and salol when administered separately, each by itself tends to impair the hearing, a combination of the two actually increases the acuity of perception. The peculiar synergism of acetanilid with sodium bicarbonate recalls the experiments of Hale who called attention to the fact that such a combination is less toxic for animals than the same dose of acetanilid given alone. Experiments are in progress with a view to attempt an explanation of this peculiar synergism, and complete data of the research will be published in due time.