

The data of table 2 are plotted in chart 1 for several values. The oxygen consumption increases almost linearly from 0 to 622 Kg.-M. per minute. Above this work rate the consumption increases much more rapidly. The maximum mean oxygen consumption attained is 3,500 ml. per minute. Bock, Vancaulaert, Dill, Fölling and Hurxthal¹⁵ stated that untrained subjects on a bicycle ergometer cannot maintain steady state when the oxygen consumption exceeds 2,000 ml. per minute. From our data (table 2) it appears that a value of 2,000 ml. can apply only to subjects in poor condition, for the majority of our subjects were able to complete 1,107 Kg.-M. with a mean consumption of 2,723 ml. per minute. The amount of training these subjects had was very slight in most cases and consisted of riding at 830 Kg.-M. per

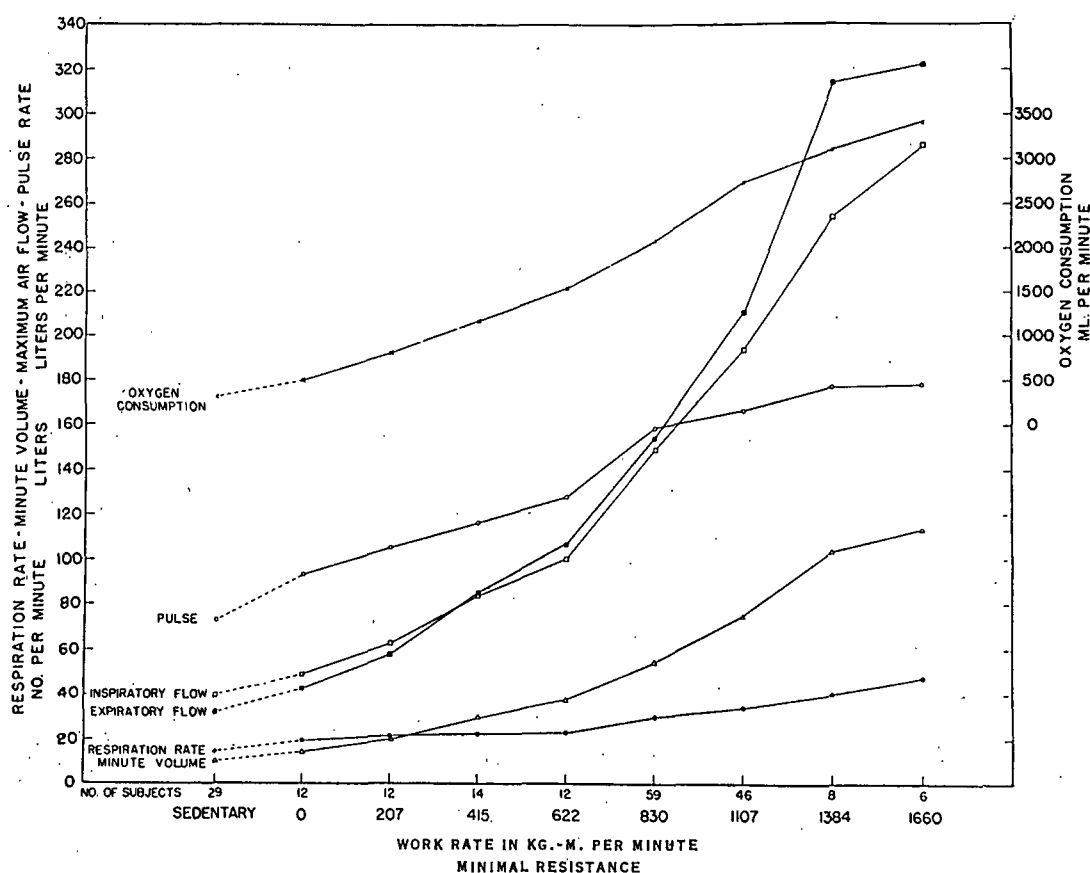


Chart 1.—Effect of increasing bicycle ergometer work rate on respiration rate, maximum air flows, minute volume, pulse rate and oxygen consumption. Minimal resistance.

minute for 15 minutes on two days before the data in table 2 were obtained. Most of the subjects listed in table 2 who rode at 830 and 1,107 Kg.-M. were in excellent physical condition, and this undoubtedly accounts for their ability to perform work requiring a higher steady state oxygen consumption. Since few subjects were able to perform rates above 1,107 Kg.-M., the oxygen consumption tends to level off at the highest work rates (chart 1). The subjects who were able to complete the highest work rates had in general better performance (minute volume, respiration rate and

15. Bock, A. V.; Vancaulaert, C.; Dill, D. B.; Fölling, A., and Hurxthal, L. M.: Studies in Muscular Activity: IV. The "Steady State" and the Respiratory Quotient During Work, *J. Physiol.* 66:162-174, 1928.