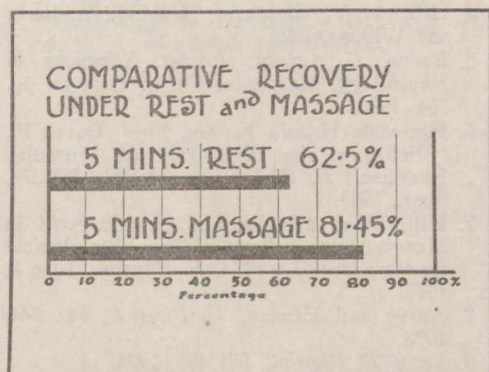


Series (d):
 Contraction to absolute. } 81.4% recovery.
 Five minutes' massage. } (18.9% greater than
 Contraction to absolute. } rest.)



Graph showing the comparative recovery of the muscles after absolute fatigue. (a) 5" rest, (b) 5" massage.

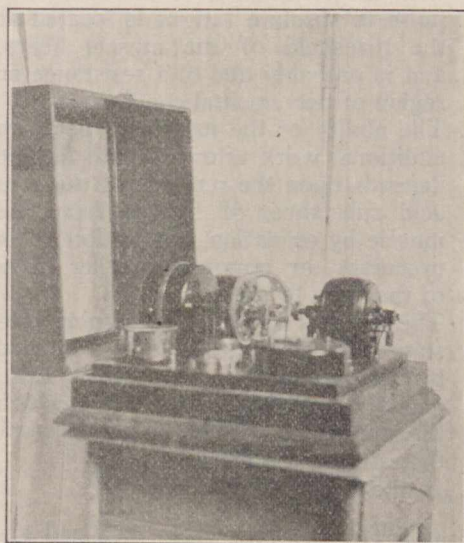
Series III. Galvanism.

Records of exact scientific experimentations to study the effect of the galvanic or constant current on the tissues are not at all numerous, but many claims are found concerning the beneficial results of its application.^{29, 30, 26} Among other things it is claimed that the kathode produces a condition of katelectrotonus or increased irritability, a marked tissue softening effect, vasodilatation, and congestion and that its application is useful in ionic medication. The effect that the anode produces is said to be anelectrotonus or a soothing effect, the power of drawing acids to itself, and the introduction of metals into the tissues in ionic medication. Graham²⁹ (p. 513) claims some remarkable results from the application of galvanism in a case of gout.

A number four polysine generator (McIntosh) was used with bipolar stable application. On the assumption that a hyperæmia would be produced at the kathode and that the anode would attract acids unto itself, the negative pole was placed on the wrist and the positive pole over the large vessels on the inner surface of the arm, 2 inches to 3 inches above the inner condyle. The poles, with a diameter of approximately 2½ inches, were well moistened in warm saline and applied for the resting period of ten minutes, excepting for the last one-half minute, when the subject was permitted to move the arm and hand as

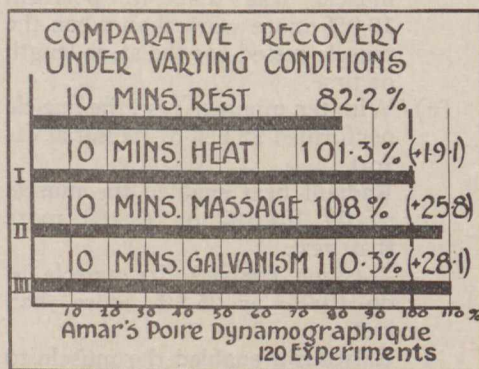
he saw fit. An interesting observation was that almost every subject voluntarily commented upon the general feeling of comfort and well being after the treatment was applied. This was not the case after heat and massage.

Following the treatment, the "recovery effort" was made and the average re-



No. 4 Polysine Generator (McIntosh).
 Used for the application of galvanism.

covery percentage for all thirty tests was 110.3%, or 28.1% more than the recovery under rest alone.



Graph summarizing the comparative recovery from absolute fatigue under varying conditions.

Conclusion:

1. Muscular exercise leading to absolute fatigue causes an increase in the lactic acid content of the muscle to approximately twenty times greater than it is