sied 3 and 4 days later. The muscles were small, extremely pale, and without irritability. Other organs seemed normal.

Experiments are in progress in which guinea pigs are to be killed at different stages in order to determine the time of onset of the disease. Curative, as well as prophylactic doses of wheat germ oil are being administered to guinea pigs and rabbits in order to ascertain whether vitamin E deficiency is the cause, or whether the toxicity of the ferric chloride itself, or its effect on the natural food diet in some way other than vitamin E destruction may be responsible. The muscles of paralyzed baby rats as produced by Evans and Burr and their coworkers[3] upon vitamin E-free diets are being investigated.

The only conclusion which may be drawn at present is that the diet described in this paper produces in the guinea pig and rabbit a general dystrophy of the voluntary muscles unaccompanied by obvious lesions in the other organs.

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Pathological Changes in the Skeletal Muscles Produced by Dietary Means.

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Guinea pigs maintained on the diet described in the previous paper[1] for periods ranging from 35 to 133 days, develop extreme degeneration of the skeletal muscles of the trunk and extremities.

The primary alteration is a waxy or hyaline necrosis of the fibers. This is followed by great proliferation of the muscle nuclei, leading to the formation of so-called "Muskelzellenschlauche" within the intact sarcolemma. There is also active regeneration of muscle cells in the later stages. The disappearance of the degenerated fibers is accompanied by a variable amount of interstitial fibrosis and lipomatosis.

The affected muscles are characterized grossly by a striking pallor. The prevailing color is yellowish grey, with fine stippling. The muscular tone and elasticity are lost, and the muscle bulk is much reduced in comparison with that of control litter mates.

Careful histological study of the principal organs and tissues other

[1] Goettsch, M., PROC. SOC. EXP. BIOL. AND MED., 1930, xxvii, 564.

than the skeletal muscles shows no significant change. The brain has not been routinely examined, but in sections of the spinal cord, the motor ganglion cells at all levels are normal in appearance. There are also no obvious lesions in the peripheral nerve trunks. The heart muscle, and the smooth muscle of the gastro-intestinal tract, bronchi, blood vessels and uterus are not affected.

Two young rabbits were examined on the 15th and 16th days after having been placed upon the experimental diet. At that time, they were extremely weak, lying flat on their belly, with limbs flaccid and outstretched. The head could not be raised from the table. The muscles were uniformly pale, grey and translucent, not stippled. Microscopically, the lesions were identical with those seen in the guinea pigs. Necrotic fibers were plentiful, but there had already occurred enormous multiplication of muscle nuclei, and active regeneration of new fibers was in progress. No other visceral lesions were detected.

The experimental diet thus brings about a universal dystrophy of the entire voluntary muscular system, and no significant lesions have as yet been found in any other tissue or organ. Inanition and scurvy may be excluded as possible factors.

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A Thermal Conductivity Recorder for Oxygen and Carbon Dioxide For Clinical Atmosphere Control.*

GRACE LUBIN AND JESSE G. M. BULLOWA. (Introduced by W. H. Park.)

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Thermal conductivity instruments, which in the past 10 years have been increasingly applied in industry and in medicine, have hitherto not been available for the measurement of oxygen in air, since it was assumed that the thermal conductivity of oxygen was too close to that of nitrogen, and hence to that of air, for the practical application of the method to this type of mixture. Recent studies at Harlem Hospital have indicated, however, that the thermal conductivity instruments used to determine the carbon dioxide content of alveolar air are more sensitive to changes in oxygen concentration than has generally been assumed to be the case. Indeed,

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