(1) A Lever Gauge. (2) Note on the illumination of Mirror-instruments

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different, and cavitation might occur. If it did it would occur behind the point of contact, and although the production of cavitation involved, in an infinitesimal degree, a loss of energy, he questioned whether it did any appreciable harm. Mr. Boys referred to the dendritic patterns formed, when mixing paints, by lifting the muller from the plate, and suggested that their formation was a phenomenon of the same kind as the cavitation exhibited by the Author.

Mr. APPLEYARD said that in reference to Mr. Skinner's suggestion that cavitation reduces friction, this might be the case in some instances where the rolling surfaces are perfectly smooth; but with imperfectly smooth surfaces it would be detrimental, for it would result in direct contact. This might explain some of the mysterious examples that occurred of sudden heating of apparently well lubricated bearings. In the case of a wheel running on a plane wet road, cavitation probably would not come into the problem of slip because, as Mr. Boys mentioned, the cavitation was always left behind. But in the case of a shaft revolving in a bearing, the cavitation left behind by one small portion of the revolving surface provided an oil-free area for the next portion; and there might be contact or there might not according to the degree of smoothness of the surfaces.

Dr. A. GRIFFITHS asked the Author if cavitation in lubrication was supposed to be an advantage or a disadvantage.

Mr. SKINNER, replying to Mr. Boys, suggested the construction of glass bearings to determine whether cavitation occurred in cylindrical shafts. He thought that cavitation in lubrication was an advantage as a rule, because spaces formerly filled with viscous material were then filled with something with small viscosity.

X. (1) *A Lever Gauge.*

(2) *Note on the illumination of Mirror-instruments.*

By R. APPLEYARD.

[Read March 8, 1901.]