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*Nature of Pressure Transmitting Media at Low
Temperature*

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temperature of tin. The pressure gradient in the sample reflects on the width directly, because higher the pressure, lower the superconducting transition temperature.⁵⁾ Increasing the load, the width increased. The pressure gradient along the side of the sample was about 2 kbar in talc medium and about 3 kbar in teflon medium at 8.5 ton load. The load versus pressure curve is shown in Fig. 5, in which the broken line is a value calculated from the ratio of load to piston area. The pressure loss, which was defined by the difference between the broken line and the solid (experimental) line, is about 30% in both pressure transmitting media, because of the friction between piston and cylinder, and also the lack of the plasticity of pressure transmitting media. In the previous work⁶⁾ without a graphite lubricant in the inner surface of cylinder, the pressure loss was 45%; thus this lubricant is presumed to be fairly useful in order to reduce a friction.

§3. Conclusion

The direct piston displacement apparatus was built and as the pressure transmitting media, talc and teflon were used. It was found that both media is very similar to their nature as pressure transmitting media.

The pressure gradient was about 2 kbar and 3 kbar at 8.5 ton load, respectively and the pressure loss was about 30% in both media compared with the value calculated simply from the ratio of load to piston area which is mainly caused by the frictional effect between piston and cylinder and also by the lack of plasticity of talc and teflon used as pressure transmitting media.

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