

CHAPTER 5

DISCUSSION AND CONCLUSION

The resonant signals in the charts as shown in Fig. 14 are rather noninal because of the unsteady magnetic field. The unsteadiness of the magnetic field gave rise to the rough signals in the charts. This result was formed to be caused by the shift of the magnetic field. Because of this effect, we could not know the exact amplitudes of the resonant signals at various rf levels when compared with the noise. Consequently, we could not find out about the saturation of the samples. The unsteadiness of the magnetic field resulted from the age of the storage cells. The signal of proton in rubber was more stable than glycerol and olive oil. This effect was observed in the C.R.O. At the resonant condition. Their photographs were as shown in Fig. 15.

For a more detail work, the magnetic field with better uniformity and a steady current supply should be used to obtain good resonant signals. In this manner the saturation of the samples could be carefully studied.

It was also found that interference from local radio stations were quite troublesome even after careful rf shielding. Thus, suitable time during the day and region of resonance had to be carefully picked.

In this exploratory work on nuclear magnetic resonance, not all of the primary objectives were attained. The limitations have been discussed for future detailed investigations in this laboratory. It is hoped that the discussion on the construction and limitations will help those, in the future, who are going to study nuclear magnetic resonance in a rather just barely adequately equipped laboratory.

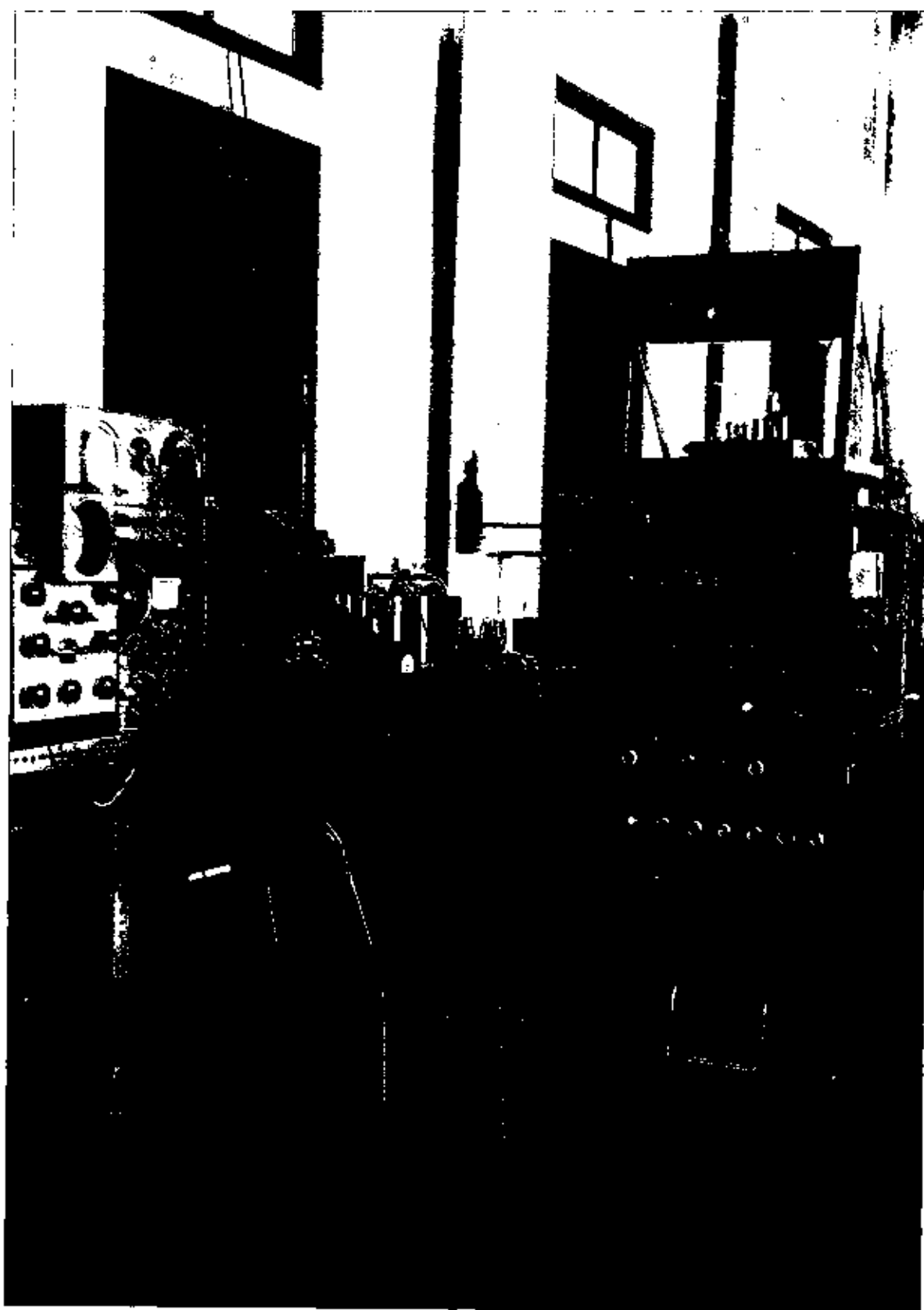


Fig. 16 THE PHOTOGRAPH OF NMR SPECTROMETER.